VOLUME II

INSTITUTIONAL CONTROLS PLAN

JUNE 2006

U.S. DEPARTMENT OF ENERGY

Revision 1
Final

Emergency Contact

Grand Junction 24-hour
Monitored Security Telephone Number

877-695-5322

EXECUTIVE SUMMARY

This Comprehensive Legacy Management and Institutional Controls Plan (LMICP) was developed to document the planning process and the requirements for the long-term care, or legacy management, of the Fernald site. The LMICP serves the same function as the Long-Term Surveillance and Maintenance Plan used at other DOE sites. The LMICP is a two-volume document with supporting documents included as attachments to Volume II. Volume I provides planning details for the management of the Fernald site that go beyond those identified as institutional controls in Volume II. Primarily, Volume II is a requirement of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), providing institutional controls that will ensure the cleanup remedies implemented at the Fernald site will protect public health and the environment. The format and content of Volume II follows U.S. Environmental Protection Agency (U.S. EPA) requirements for institutional controls. Once approved, Volume II becomes enforceable under CERCLA authority.

Volume I is the Legacy Management Plan. This plan is not a required document under the CERCLA process; it is not a legally enforceable document, but provides the Department of Energy (DOE) Office of Legacy Management's management plan for maintenance of the Fernald site as a commitment from DOE to carefully maintain the Fernald site following closure. The plan discusses how the DOE, specifically the Office of Legacy Management, will approach legacy management of the Fernald site. It describes the surveillance and maintenance of the entire site, including the on-site disposal facility (OSDF). It explains how the public will continue to participate in the future of the Fernald site. Also included in the Legacy Management Plan is a discussion of records and information management. The plan ends with a discussion on funding for legacy management of the site and includes an estimate of costs through fiscal year 2012.

Volume II is the Institutional Controls Plan (IC Plan). The IC Plan is required under the CERCLA remediation process when a physical remedy does not allow for full, unrestricted use or when hazardous materials are left on site. The plan is a legally enforceable CERCLA document and part of the remedy for the site (a requirement of the U.S. EPA). The plan outlines the institutional controls that are established and enforced for the entire site, including the OSDF, to ensure continued protection of human health and the environment following completion of the remedy. The IC Plan has five attachments that lend support and provide details regarding the established institutional controls. The attachments provide further detail on the continuing groundwater remediation (pump and treat) system (Attachment A); OSDF cap and cover system (Attachment B); the leak detection and leachate management systems for the OSDF (Attachment C); and the environmental monitoring that will continue following closure (Attachment D). All of these attachments were used during remediation, and all of them will be adhered to post-closure. Also attached to Volume II is the Community Involvement Plan (CIP) (Attachment E), a CERCLA required document, developed by DOE. The CIP explains in detail how the public will continue to participate in the future of the Fernald site.

DOE has made the LMICP as comprehensive as possible, with all necessary information contained in one document. This revision (Revision 1) was submitted to the U.S. EPA and Ohio Environmental Protection Agency (OEPA) in June 2006. The document became effective when Fluor Fernald submitted their Declaration of Physical Completion.

For the June 2006 submittal, each document (attachment/support plan), included as part of the LMICP, is written to address post-closure activities. During October 2006, necessary updates to address further post-closure refinements will be made through change pages or document re-submittals as necessary. Upon U.S. EPA and OEPA approval, it is anticipated that the LMICP will be FINAL each year by January to correspond with calendar year monitoring and reporting (between October and January, U.S. EPA and OEPA comments will be addressed).

The future LMICP schedule will be as follows:

- Each June the annual site environmental reports will be submitted that will make recommendations based on the previous years monitoring information.
- Each October, an annual review of the LMICP will be submitted to identify updates as necessary.
- Each January, the document will be finalized to correspond with the monitoring and reporting schedule.

After submittal of the full document in June 2006, the next full revision will occur in October 2007. Additionally, pertinent information associated with the CERCLA five-year reviews will be included in the LMICP revisions as needed.

TABLE OF CONTENTS

VOLUME II
INSTITUTIONAL CONTROLS PLAN

TABLE OF CONTENTS
(Continued)

LIST OF TABLES

LIST OF FIGURES

APPENDICES

LIST OF ATTACHMENTS

LIST OF ACRONYMS

ARARs	applicable or relevant and appropriate requirements
CAWWT	converted advanced wastewater treatment facility
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIP	Community Involvement Plan
CFR	Code of Federal Regulations
CRARE	Comprehensive Remedial Action Risk Evaluation
DOE	Department of Energy
FCAB	Fernald Citizens Advisory Board
FEMP	Fernald Environmental Management Project
FRL	final remediation level
GWLMP	Groundwater/Leak Detection and Leachate Monitoring Plan
IC Plan	Institutional Controls Plan
IEMP	Integrated Environmental Monitoring Plan
LCS	leachate collection system
LDS	leak detection system
LMICP	Comprehensive Legacy Management and Institutional Controls Plan
MUEF	multi-use educational facility
NPDES	National Pollutant Discharge Elimination System
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OMMP	Operations and Maintenance Master Plan for the Aquifer Restoration and Wastewater Project
OSDF	on-site disposal facility
OU	operable unit
PCCIP	Post-Closure Care and Inspection Plan
ppb	parts per billion
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
SEP	Site-wide Excavation Plan
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
WAC	waste acceptance criteria

1.0 INTRODUCTION

The Department of Energy (DOE) manages the Fernald site, owned by the federal government, which is situated on a 1,050-acre tract of land, approximately 18 miles northwest of Cincinnati, Ohio. The Fernald site is located near the unincorporated communities of Ross, Fernald, Shandon, and New Haven. Land use in the area consists primarily of residential areas, farming, gravel excavation operations, light industry, and parks.

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) is the primary driver for environmental remediation of the Fernald site. The site was divided into five operable units (OUs) and a Remedial Investigation and Feasibility Study (RI/FS) was conducted for each unit. Based on the results of the RI/FS, Records of Decision (RODs) were issued outlining the selected remedy for each OU.

- **Record of Decision for Operable Unit 1, Waste Pits Area** – The remedy for OU1 included removing all material from the waste pits, stabilizing the material by drying, and shipping it off site for disposal. This process was completed in the summer of 2005.
- **Record of Decision for Operable Unit 2, Other Waste Units** – The remedy for OU2 included removing material from the various units, disposing of material that meets the on-site waste acceptance criteria (WAC) in the on-site disposal facility (OSDF), and shipping all other material off site for disposal. WAC were developed by DOE and regulators, with input from the stakeholders and the public, to strictly control the type of waste disposed on site. The WAC are documented in the Waste Acceptance Criteria (WAC) Attainment Plan for the On-site Disposal Facility (DOE 1998a).
- **Final Record of Decision for Operable Unit 3, Production Area** – The OU3 remedy included decontaminating and decommissioning all contaminated structures and buildings, recycling waste materials if possible, disposing of material that meets the on-site WAC in the OSDF, and shipping all other material off site for disposal.
- **Record of Decision for Operable Unit 4, Silos 1–4** – The OU4 remedy included removal and treatment of all material from the silos, dismantling the silos, and shipping the waste materials and silos debris off site for disposal.
- **Record of Decision for Operable Unit 5, Environmental Media** – OU5 includes all environmental media, including soil, sediment, surface water, groundwater, and vegetation. The Site-wide Excavation Plan (SEP) (DOE 1998b) describes the remediation of soils, which includes the excavation of soils that exceed the risk-based final remediation levels (FRL) for a list of constituents of concern as listed in the SEP. The OU5 ROD (DOE 1996) describes the approved remediation method of pump-and-treat for groundwater until levels of uranium in groundwater are less than 30 parts per billion (ppb). In the original ROD, the FRL for uranium in groundwater was 20 ppb. After approval by U.S. EPA and OEPA, the FRL was raised to 30 ppb, as written in the Explanation of Significant Differences for Operable Unit 5 (DOE 2001).

A list of the Records of Decision and all associated documents is included in Appendix A of this volume.

Upon Fluor Fernald's Declaration of Physical Completion, or closure, the construction of the OSDF and almost all site clean-up activities were completed. All that remains are the ongoing actions necessary to achieve final cleanup of the Great Miami Aquifer, including decommissioning and dismantling of the

converted advanced wastewater treatment facility (CAWWT) and associated infrastructure following clean-up of the aquifer, and remediation of utility corridors and the CAWWT footprint (see Volume I, Figure 3).

Ecological restoration followed remediation and was the final step to completing cleanup of the site. Ecological restoration activities at the site were also being implemented to address wetland mitigation requirements under the Clean Water Act, and to stabilize and re-vegetate areas impacted during remediation.

The OSDF, located on the eastern side of the Fernald site, is complete. The OSDF consists of eight disposal cells, the footprint of which covers an area of approximately 75 acres. A buffer area and perimeter fence are established around the disposal facility and the total OSDF area is approximately 120 acres. Approximately 900 acres of the Fernald site have been ecologically restored, having been graded following excavations, amended, and seeded/planted or otherwise enhanced to create ecosystems comparable to native pre-settlement southwestern Ohio. A few facilities remain on site. These include the CAWWT and supporting infrastructure, extraction wells, and associated piping and utilities, the outfall line to the Great Miami River, and the Silos warehouse (refer to Figure 1).

The DOE Office of Environmental Management was responsible for the remediation of the Fernald site. Post-remediation responsibilities have transitioned to the DOE Office of Legacy Management. The Office of Legacy Management is responsible for the post-remediation operations (including decontaminating and dismantling the aquifer remediation infrastructure), maintenance, and enforcement of institutional controls at the site.

1.1 PURPOSE AND ORGANIZATION OF THIS INSTITUTIONAL CONTROLS PLAN

This Institutional Controls Plan (IC Plan) outlines the institutional controls established and enforced since remediation was completed, with the exception of the groundwater remediation, at the Fernald site. This IC Plan documents DOE's approach to maintaining institutional controls as required by the U.S. EPA under CERCLA. The institutional controls outlined in this plan are designed to ensure the continued protection of human health and the environment following closure of the site. The Office of Legacy Management is responsible for monitoring, maintaining, reporting on and implementing institutional controls at the Fernald site. This IC Plan will be reviewed on an annual basis to determine if revisions are required. All revisions will be subject to Regulatory Agency review and will be made available to the stakeholders. The IC Plan will also be reviewed every five years in conjunction with the CERCLA five-year review and revisions will be made as needed. Revisions can always be made on an as-needed basis, if the results of site and OSDF inspection and monitoring require them.

FERNALD LEGACY MANAGEMENT
Future Use

LAND USE

395 acres of Woodlots
332 acres of Prairie
120 acres of OSDF
81 acres of Wetlands
60 acres of Open Water
33 acres of Savanna
29 acres of Infrastructure

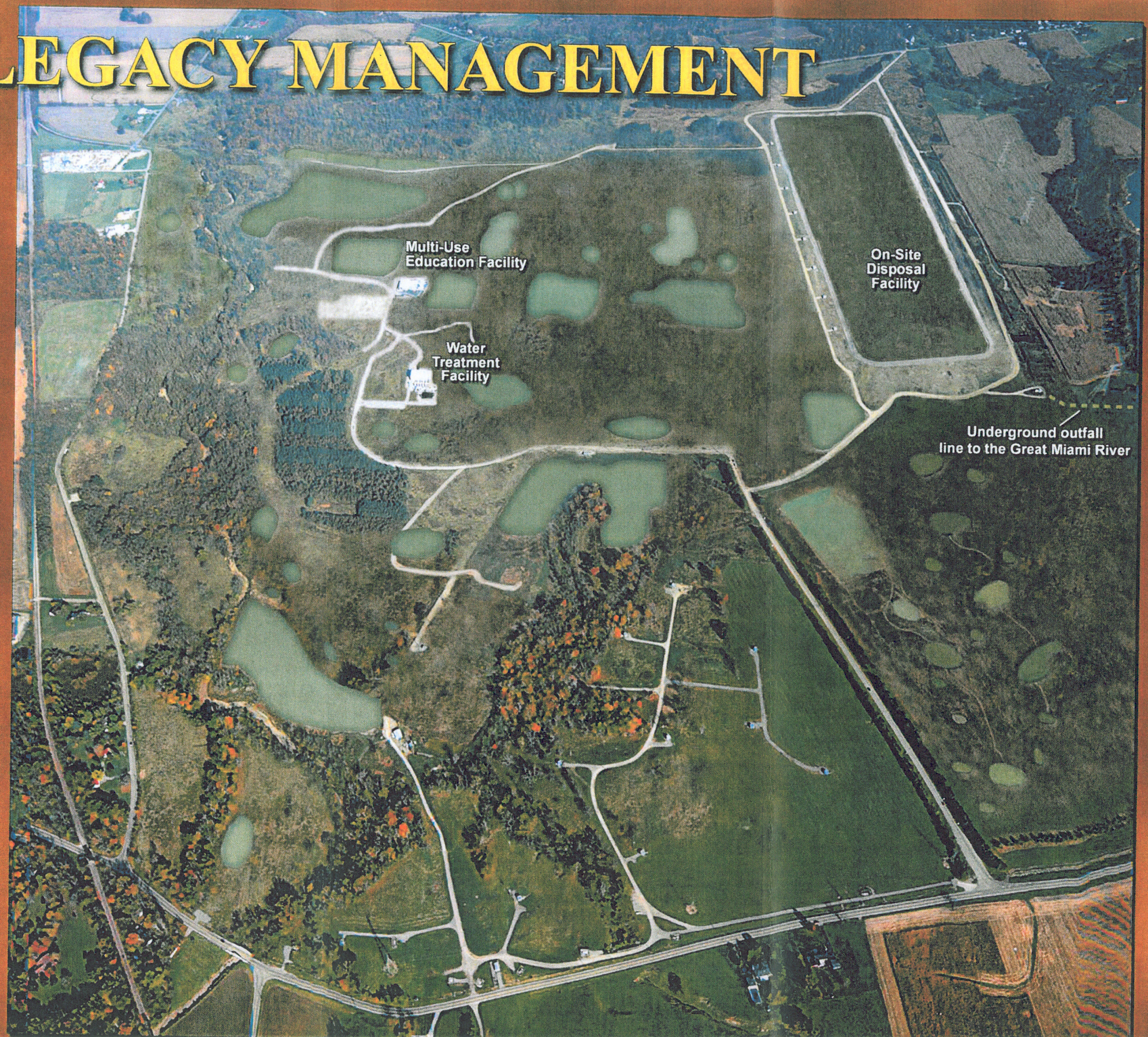

Figure 1

Fluor Fernald

Graphic # 8131.23-1 11/06

In addition, changes to any of the support plans attached to this IC Plan may trigger revisions to the IC Plan. The approved IC Plan is part of the CERCLA remedy for Fernald.

The documents attached to this IC Plan provide further detail and more subject-specific information regarding institutional controls and other post-closure activities. These documents include:

- Attachment A, The Operations and Maintenance Master Plan for the Aquifer Restoration and Wastewater Project (OMMP) (DOE 2006a)
- Attachment B, The Post-Closure Care and Inspection Plan; On-site Disposal Facility (PCCIP) (DOE 2006b)
- Attachment C, The Groundwater/Leak Detection and Leachate Monitoring Plan (GWLMP) (DOE 2006c)
- Attachment D, The Integrated Environmental Monitoring Plan (IEMP) (DOE 2006d)
- Attachment E, The Community Involvement Plan (CIP) (DOE 2006e)

After approval, the five support documents also become part of the CERCLA remedies.

1.2 SUMMARY OF SUPPORT DOCUMENTS

The OMMP establishes the design logic and priorities for the major flow and water treatment decisions needed to maintain compliance with the Fernald site's National Pollutant Discharge Elimination System (NPDES) permit and ROD (OU5) based surface water discharge limits. The OMMP is designed to guide and coordinate the extraction, collection, conveyance, treatment, and discharge of all groundwater, storm water, sanitary and remediation wastewater generated site-wide through the duration of the cleanup program. A summary of the information contained in the OMMP is included in Section 3.1.3, Groundwater Remedy and Monitoring. Periodic reviews of the OMMP will be conducted to respond to needed changes in program emphasis or the addition of new components, as necessary.

The PCCIP addresses the inspection, monitoring, and maintenance activities necessary to ensure the continued proper performance of the OSDF. Key concepts addressed include ownership; access controls and restrictions; deed and/or use restrictions; environmental monitoring; OSDF cap and buffer area inspections; custodial maintenance; contingency repair; corrective actions; emergency notifications; reporting; and public involvement. Additional details from this plan are included in Section 3.2.1, OSDF Inspection and Maintenance. The PCCIP will continue to be reviewed as needs and requirements for the care of the OSDF change. Section 11.2 of the PCCIP lists conditions under which the PCCIP may require modification.

The GWLMP specifies the frequencies and parameters being monitored in four horizons for each cell of the OSDF. These horizons are the leachate collection system (LCS), the leak detection system (LDS), perched water in the glacial overburden, and the Great Miami Aquifer (both upgradient and downgradient of each cell). Cell-specific data from these four horizons are evaluated holistically in order to verify the

integrity of the cells. To date the data from this comprehensive leak detection program indicate that the liner systems for the existing cells are performing within the specifications established in the OSDF design documentation. The GWLMP will be reviewed with the LMICP on an annual basis until the next CERCLA five-year review. Any modifications to the plan will be based on the data collected prior to and just after capping. The GWLMP governs the post-closure leak detection and leachate monitoring program for the OSDF. Further details in this IC Plan from the GWLMP are included in Section 3.2.2, Leak Detection/Leachate Management.

The IEMP directs environmental monitoring program elements that support site remediation activities. The document outlines all regulatory requirements for site-wide monitoring, reporting, and remedy performance tracking activated by the applicable or relevant and appropriate requirements (ARARs) identified in the remedy selection documents. The various elements of environmental monitoring that are addressed include groundwater monitoring (Section 3.0), surface water and treated effluent (Section 4.0), sediment (Section 5.0), and air (Section 6.0). Section 7.0 provides a review and summary of the various programs, the revision schedule for the IEMP and reporting requirements.

The CIP documents how DOE will ensure the public has appropriate opportunities for involvement in site-related decisions, including site controls, management, and monitoring.

1.3 DEFINITION AND PURPOSE OF INSTITUTIONAL CONTROLS

Institutional controls are important to help minimize the potential for exposure to and release of residual contaminants, ensuring the protection of human health and the environment. Institutional controls are also important in helping to protect engineered remedies by providing a means to ensure the remedy remains effective, is not showing signs of failure, or is not being vandalized or damaged by outside elements (natural or human) in any way. (Section 1.4 describes the types of institutional controls at the site.)

The U.S. EPA, in "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA corrective Action Cleanups" (EPA 2000), has defined institutional controls as administrative and/or legal controls (i.e., non-engineered) that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. Institutional controls work by limiting land or resource use by providing information to modify or guide human behavior at the site.

DOE has defined institutional controls as mechanisms designed to appropriately limit access to or uses of land and facilities, to protect cultural and natural resources, to maintain physical security of DOE facilities, and to prevent or limit inadvertent human and environmental exposure to residual contaminants. Institutional controls include methods to preserve knowledge and to inform current and future generations of hazards and risks (DOE 2000).

Although the DOE and U.S. EPA definitions differ slightly, (DOE includes physical controls, such as fences and gates, as institutional controls) they both focus on the same goal, to protect human health and the environment from residual hazards.

1.4 TYPES OF INSTITUTIONAL CONTROLS

The types of institutional controls being used at the Fernald site during legacy management, which are outlined in this plan, serve two functions; 1) to eliminate the disturbance and monitor use of the Fernald site and 2) to minimize human and environmental exposure to residual contaminants, as described below. The site was divided into two sub-areas for institutional control purposes: the Fernald site and the OSDF. The OSDF includes the disposal facility and its buffer area. This area is enclosed by a fence and locked at all times, unless authorized personnel require access. The Fernald site is all of the remaining property on site. The Fernald site is an accessible area to employees and the public, with only very small, fenced off, restricted areas. The two areas are treated separately because of the greater restrictions that apply to the OSDF.

- **Controls to Eliminate Disturbance and Monitor Use of the Fernald Site (Section 2.0)** – describes institutional controls that apply to both the Fernald site and the OSDF that are designed to limit access and land use. These controls focus on ensuring the Fernald site remains in a configuration consistent with the designated land use and that unauthorized uses of the Fernald site do not occur. These include proprietary controls; governmental controls; and preventing unauthorized use by means of informational devices, security, physical barriers, and routine inspections. As part of the informational devices, a multi-use educational facility (MUEF), to house site information is being established. Also discussed are the methods of controlling, restricting, or prohibiting recreational activities. (Refer to Tables 2-1 and 2-2 for a summary of these controls.)

- **Controls to Minimize Human and Environmental Exposure to Residual Contaminants (Section 3.0)** – Describes the institutional controls (i.e., monitoring and sampling) used to ensure continued protection of human health and the environment. These controls focus on maintaining engineered systems and infrastructure that are designed to protect human health and the environment. This category also includes use of the MUEF to provide educational information on the site remedy and measures required to monitor and maintain the remedy. These include routine inspections, permits, continuing groundwater remedial activities, routine maintenance and monitoring, and leachate management practices.

1.5 AGENCY REQUIREMENTS FOR INSTITUTIONAL CONTROLS

The need for institutional controls is described in the OU2 and OU5 RODs (refer to Appendix B). The OU5 ROD, page 9-16, states: "One element of the selected remedy that will be used to ensure protectiveness is institutional controls, including continued access controls at the site during the remediation period, alternate water supplies to affected residential and industrial wells, continued federal ownership of the disposal facility and necessary buffer zones, and deed restrictions to preclude residential and agricultural uses of the remaining regions of the Fernald Environmental Monitoring Plan (FEMP) property." The intent of the IC Plan is to describe the institutional controls, both physical and administrative, being implemented at the Fernald site. This IC Plan was submitted to the U.S. EPA and the OEPA under the OU5 ROD as a primary document and becomes part of the remedy for the Fernald site once approved.

1.6 UPDATES TO THE INSTITUTIONAL CONTROLS PLAN

For the June 2006 LMICP submittal, each document (attachment/support plan) included as part of the LMICP, is written to address final remediation and post-closure activities. During October 2006, necessary updates to address further post-closure refinements will be made through change pages or document re-submittals as necessary. Upon EPA and OEPA approval, it is anticipated that the LMICP will be FINAL each year by January to correspond with calendar year monitoring and reporting (between October and January, EPA and OEPA comments will be addressed).

The future LMICP schedule will be as follows:

- Each June the annual site environmental reports will be submitted that will make recommendations based on the previous years monitoring information.
- Each October, an annual review of the LMICP will be submitted to identify updates as necessary.
- Each January, the document will be finalized to correspond with the monitoring and reporting schedule.

After submittal of the full document in June 2006, the next full revision will occur in October 2007. Additionally, pertinent information associated with the CERCLA five-year reviews will be included in the LMICP revisions as needed.

2.0 CONTROLS TO ELIMINATE DISTURBANCE AND MONITOR USE OF THE FERNALD SITE

2.1 FERNALD SITE

The primary institutional controls for disturbance and use of the general Fernald site include continued federal ownership, real estate restrictions (if necessary), and preventing unauthorized use of the Fernald site with access controls and inspections. The institutional controls for disturbance and use of the Fernald site are summarized in Table 2-1.

2.1.1 Proprietary Controls and Points of Contact

Proprietary controls are those controls that originate from the responsibilities associated with the ownership of property. These controls are established to ensure that the Fernald site remains in a configuration consistent with the designated land use and ensuring unauthorized uses do not occur. In the case of the Fernald site, the federal government will maintain ownership, as stated in the OU2 ROD (DOE 1995). Primary and secondary points of contact have been established for emergency purposes, to ensure authorized access, and to ensure open communication (refer to Appendix C). In the event of an on-site emergency, the observance of unacceptable behavior, or if someone has questions, the points of contact should be contacted.

The following list of actions are prohibited to ensure ongoing protection of the site and for anyone using the site. Prohibited actions will be clearly posted at site access points. The following list applies to all unauthorized personnel.

- No alcohol or illegal drugs.
- No firearms
- No removal or intentional damage of plants.
- No mushroom gathering.
- No soil excavation.
- No removal or intentional damage of archaeological materials.
- No swimming or wading.
- No camping.
- No hunting, trapping, or fishing.
- No dumping.
- No smoking in prohibited areas, fires or other open flames.
- No tampering, manipulating or damage of structures, fences, signs, water control devices, or other federal property.
- Stay on designated roadways.

An interim residual risk assessment is being performed to evaluate post-closure risks associated with the site. The risk assessment has two phases. Phase I focuses on the development of a GIS based risk assessment tool to evaluate the final land use receptors identified in the OU5 ROD (i.e., undeveloped park user, expanded trespasser, and off-site farm resident) using certification data presently available and updated caner slope factors (CSFs) and reference doses (RfDs). Additionally recreational scenarios, such as hunting, fishing and camping, may be examined as an information only exercise, but there is no requirement to include these additional scenarios in the interim residual risk assessment report produced under Phase II. The risk tool will be used by Legacy Management to evaluate future risk scenarios at the site as groundwater remediation continues and, ultimately, to perform the final risk assessment when the OU5 remedial actions are complete.

TABLE 2-1
CONTROLS ON DISTURBANCE AND USE OF THE FERNALD SITE

CONTROL	REQUIREMENT	FREQUENCY	SCOPE
PROPRIETARY CONTROLS 1. Establish points of contact	1. DOE legacy management guidance	1. Initially and when updates are needed	1. Provide primary and backup points of contact for emergencies. Points of contact will be updated in the Legacy Management Plan as needed. The Office of Legacy Management 24-hour emergency line is 877-695-5322.
2. Ownership	2. OU2 ROD OU5 ROD DOE legacy management guidance	2. NA	2. Federal government will maintain ownership of site property. Management will transition from the DOE Office of Environmental Management to the DOE Office of Legacy Management.
GOVERNMENTAL CONTROLS 1. Notations on land records or real estate restrictive license	1. OU2 ROD OU5 ROD	1. Annual verification	1. If management of portions of the Fernald site (outside of the disposal facility area) is transferred to another federal entity at any time, all zoning and real estate restrictions will be communicated to the appropriate parties, and proper notifications will be provided as required.
PREVENTING UNAUTHORIZED USE OF THE FERNALD SITE 1. Informational devices	1. OU2 ROD OU5 ROD	1. NA	1. Information Devices • A MUEF will provide information on site remediation, site restrictions, ongoing maintenance and monitoring, and residual risk information. • In order to maintain the integrity of the site, access may need to be limited or restricted in some areas. Signs indicating restricted access will require monitoring and maintenance to ensure their legibility and integrity.
2. Security of the site	2. OU2 ROD OU5 ROD	2. Daily	2. Security • There will be routine patrols of the Fernald site and perimeter postings to prevent unauthorized access and use of the site. • Site facilities and structures will be locked when personnel are not present during non-business hours. • Some site facilities and structures will be fenced and locked at all times and only authorized access will be permitted
3. Routine Site Inspections	3. OU2 ROD OU5 ROD	3. Quarterly	3. Formal inspections will be conducted to ensure infrastructure, signs/posting, fences/gates, perimeter areas, and access points are in a secure and safe configuration per Fernald Site Areas Post-Closure Inspections Checklist (refer to Appendix D).

Phase II calculates the residual risks to the undeveloped park user, expanded trespasser, and off-site farm resident, based on the complete certification data set. The results will be published in a formal report and compared to the CRARE to demonstrate that the remedial objectives at the site have been met or exceeded. The results may also impact the future use and institutional controls at the site and may require revisions to this LMICP.

Land use restrictions may be modified or terminated in consultation with the U.S. EPA and OEPA.

2.1.2 Governmental Controls

A part of the governmental controls at the Fernald site will be the use of real estate notations and restrictions, should they become necessary (i.e., another organization would have the responsibility of managing the property). Notations on land records or similar restrictive real estate licenses will be in place for the Fernald site and off-site property that is impacted by Fernald site activities. The Office of Legacy Management will ensure the real estate notations remain in place, as long as they are needed. In addition, should there be a transfer of management from DOE to another federal entity of any part of the site, DOE will ensure the controls remain in place. Per the OU2 and OU5 RODs, deed restrictions, if implemented, will be reviewed on an annual basis by the Office of Legacy Management to ensure they remain in effect with the local authorities. A review of notations or real estate restrictions and other institutional controls will also be part of the CERCLA five-year review process.

In the event that DOE transfers management of or leases the property to an entity other than DOE, the appropriate regulatory approvals will be secured and restrictions and limitations will be communicated and implemented (e.g., zoning restrictions). In such cases, DOE will work with the agency to ensure that institutional controls for the active site will remain effective. This may be documented in a memorandum of understanding or other appropriate instrument. A description of the various types of institutional controls pertaining to ownership and/or transfer of DOE land is included in Institutional Controls in RCRA and CERCLA Response Actions at Department of Energy Facilities (DOE 2000).

2.1.3 Preventing Unauthorized Use of the Fernald Site

2.1.3.1 Informational Devices

The "No Trespassing" signs that currently exist along the perimeter of the Fernald site will remain to discourage access to the site at locations other than designated access points. These signs state the following:

> **No Trespassing by Order of the United States Department of Energy**
>
> The unauthorized entry upon any facility, installation, or real property subject to the jurisdiction, administration, or in the custody of the Department of Energy, which has been designated as a subject to the provisions contained in Title 10, Code of Federal Regulations (CFR), Part 860, is prohibited. The unauthorized carrying, transporting, or otherwise introducing or causing to be introduced, any dangerous weapon, explosive or other dangerous instrument or material likely to produce substantial injury or damage to persons or property, into or upon such facility, installation or real property is likewise prohibited.

> Whoever willfully violates these regulations, shall, upon conviction, be punishable by a fine of not more than $5000. Whoever willfully violates these regulations with respect to any facility, installation, or real property enclosed by a fence, wall, floor, roof, or other structural barrier, shall be guilty of a misdemeanor and, upon conviction, shall be punished by a fine not to exceed $100,000 or imprisonment for not more than one year, or both. (Title 42, United States Code § 2278; Title 18, United States Code § 3571)
>
> By authority of Section 229 of the Atomic Energy Act of 1954, as amended (Title 42 United States Code § 2278(a)) and Title 10, CFR, Part 860 of the rules and regulations of the Department of Energy, this facility, installation, or real property has been designated as subject to these regulations by the United States Department of Energy. Trespassers may be subject to the provisions stated above.

Final site configuration includes postings at access points and other strategic locations indicating prohibited activities and site contact information. The same applies to the OSDF restricted area, the CAWWT and fenced extraction wells (refer to Figure 2).

DOE will establish a Multi-Use Educational Facility (MUEF) on site (expected completion in 2007). The Silos Warehouse will be refurbished for use as the MUEF. The MUEF will contain information and context on the remediation of the Fernald site, including information on site restrictions, ongoing maintenance and monitoring, and residual risk information. The MUEF will also provide informational copies, a reading room, a meeting place and other education information as appropriate. A primary goal of the MUEF is to fulfill an informational and educational function within the surrounding community. The information housed in the MUEF will serve as an institutional control and will serve to maintain awareness of site history and conditions and help prevent unsafe disturbances and uses of the site.

Remodeling work and installation of educational materials and information will occur after site closure in coordination with the Office of Legacy Management. The MUEF will be maintained and operated under the direction of the Office of Legacy Management. DOE will evaluate the use of the MUEF and the programming provided by the MUEF on a periodic basis with Stakeholder input. Design of the MUEF will be completed with input from Stakeholders. Upon completion of the MUEF, DOE will obtain Stakeholder input on decisions regarding changes to the MUEF or ongoing operation of the MUEF.

Realizing that certain structures are being left at the Fernald Closure Project to support continued management of the site, DOE is working to define the required structures needed immediately after closure and the manner in which future structures may be installed if needed. Once this effort has concluded, DOE will work with U.S. EPA to determine the appropriate regulatory vehicle to reconcile the Operable Unit 3 ROD (e.g., Fact Sheet or Explanation of Significant Differences).

The structures subject to a OU3 ROD reconciliation are those solely to support legacy management of the site. There are other facilities at the site, under the authority of OU5, that are required for the continued implementation of the ongoing groundwater remedy, maintenance of the OSDF, and environmental monitoring.

AMS-12 (BACKGROUND) 3.2 MILES, MORGAN TWNSHP.

PARKING LOT W/ACCESS BARRIER
PADDY'S RUN
CULVERT
FOOT BRIDGE
CULVERT
CINCI BM #1899
BM-1 #1003 (TI)
BUTLER CO.
PARKING LOT ACCESS W/ACCESS BARRIER
PADDY'S RUN ROAD
STORM 4008
BUTLER/HAMILTON COUNTY LINE
FORMER RAIL TRESTLE
CULVERTS
WASTE PIT 5
CULVERT
RESTORED WETLAND
CULVERT
DRAINAGE DITCH NORTH OF PIT 5
CULVERTS
WASTE PIT 6
RESTORED WETLAND
RESTORED WETLAND
PADDY'S RUN STREAM RESTORATION
EW-33A
FORMER SILOS WAREHOUSE BLDG. 94K (CONVERT TO MULTI-USE EDUCATIONAL FACILITY)
WEST FIRE WATER TOWER FOUNDATION
CULVERT
EW-28
WAREHOUSE PARKING & ACCESS
ACCESS BARRIER
AMS-6
STORM 4005
WETLAND
EW-27
CAWWT FACILITY
EW-26
CULVERT
FENCE
AWWT CAISSONS
OXBOW AREA RESTORATION
PARKING AREA
WETLANDS
60 INCH CULVERT
VALVE HOUSE
PARKING AREA
BACK WASH BASIN
WETLAND
ECOLOGICAL RESTORATION PARK & OBSERVATION DECK AREA W/ACCESS BARRIER
M-1
IW-29
STORM 4004
M-3
EW-17A
EW-15A
RESTORED WETLAND AREA
BACK PRESSURE CONTROL BLDG.
EW-15
PADDY'S RUN STREAM RESTORATION
SOUTHFIELD VALVE HOUSE 18V
IW-16
N-6
SIGN
CULVERT
STORM 4003
EW-18
EW-24
EW-22
IW-8
IW-8A
IW-9
IW-9A
IW-10
IW-10A
CULVERT
BRIDGE
SUBSTATION FENCE
CG&E EASEMENT
WATER METER BLDG. 18T & GAS CONNECTOR 22F
NEW ELECTRIC SUBSTATION 16Q
SOUTH PLUME OPTIMIZATION WELLS
EASEMENT (TYP.)
RECOVERY WELL SYSTEM CONTROL BLDG. 18S
SOUTH PLUME RECOVERY WELLS

RT. 126
SIGN
GATE
AMS-2
RESTORED WETLAND AREA
N-2
WOODCHIP PILE
NATURAL WETLAND AREA
RESTORATION STORAGE SHED 12G
CULVERT
GATE
PARKING AREA
OSDF-BM 01
OSDF-BM 02
CULVERT
VALVE HOUSE 1
VALVE HOUSE 2
AMS-8A
BM-10
ACCESS GATE TO SUMME PROPERTY
FIRE TRAINING FACILITY
CULVERTS
1/2 SECTION CORNER
(3) CULVERT
CULVERT
VALVE HOUSE 3
BM-OSDF-2
VALVE HOUSE 4
OSDF PERIMETER FENCE
OSDF
VALVE HOUSE 5
VALVE HOUSE 6
VALVE HOUSE 7
AMS-3
VALVE HOUSE 8
OSDF BM 03
PARKING AREA W/ GATE
OSDF BM 04
WETLAND
CULVERT
CONTROL VALVE HOUSE
FORMER DISSOLVED OXYGEN BLDG. 18P (CONVERT TO WAREHOUSE)
D.O. SUBSTATION 16K
WIRELESS COMM. TOWER
LEACHATE LIFT STATION
OPEN WATER
PARSHALL FLUME BUILDING 18R
OUTFALL SEWERLINE AND GAS LINE EASEMENT (AREA 9, PHASE III)
CULVERT
BM-OSDF-3
VALVE HOUSE & 3 WELLS
CULVERT
EW-25
FORMER COMMUNICATIONS BLDG. 23B (CONVERT TO WAREHOUSE)
RESTORED WETLAND
CULVERT
EW-21A
EW-20
EW-31
EW-19
CULVERT
EW-30
EW-23
EW-32
GATE
N-1
IW-12
SIGN
AMS-24
WILLEY ROAD
CULVERT
CG&E
RT 128

MAP NOT INTENDED TO SHOW ALL CULVERTS, GUARD RAILS, DEER FENCE, BOLLARDS, PARKING STOPS AND PULL OFFS, MAINTENANCE ACCESS PARKING AREAS AND ASSOCIATED ACCESS BARRIERS, PERIMETER SIGNAGE, SURFACE WATER CONTROL WEIRS, OR DITCH RIPRAP LOCATIONS.

LEGEND

- ROAD
- PROPERTY LINE
- WET LANDS
- EDGE OF CREEK
- FENCE LINE
- EASEMENT
- WATER FLOW
- PONDS/WETLANDS
- TRANSMISSION TOWER
- TREE LINE
- EXTRACTION WELL HOUSE
- POLE
- AIR MONITORING STATION
- N-1 GPS BENCH MARK
- STORM 4006 REGULATED STORMWATER OUTFALLS
- IW-11 INJECTION WELL (WELL & CASING ONLY TO REMAIN)
- EMERGENCY WARNING SIREN
- ACCESS BARRIER
- FIRE HYDRANT

- WOODED AREA
- PONDED WATER
- GRAVEL ROADS/PARKING AREAS
- ASPHALT ROADS
- UNIMPROVED "PATH-LIKE" ROADS
- ON SITE DISPOSAL FACILITY
- NATURAL WETLAND AREA
- RESTORED WETLAND AREA
- CLEAN FOUNDATIONS LEFT IN PLACE
- ADDITIONAL AREAS WHERE BALLAST AND STONE IS SUBSURFACE WITH VEGETATIVE COVER EXCEPT IN RAPARIAN AREAS

400 200 0 800 400 800
SCALE: 1"=400'

GPS BENCH MARK LOCATION PLAN

MONUMENT	DESCRIPTION	NORTHING	EASTING	ELEVATION	SURVEY
BM-1	(ESTAB.) SITE ORIGIN (0,0)	482813.982	1348109.041	579.83	WOOLPERT
M-1	FLY AS PILE	478237.93	1347705.20	573.62	WOOLPERT
M-3	FLY AS PILE	477948.929	1348451.099	577.41	WOOLPERT
N-1	ALUMINUM CAPPED PIN	476876.20	1351301.43	607.88	WOOLPERT
N-6	ALUMINUM CAPPED PIN	476928.55	1348369.68	551.99	WOOLPERT
BM 1003	BUTLER CO	482887.97	1348001.20	579.93	WOOLPERT
BM 1899	CITY OF CINCINNATI	482781.79	1345309.62	579.06	WOOLPERT
1/2 SECTION CORNER	HAMILTON COUNTY				
1/2 SECTION CORNER	HAMILTON COUNTY				
BM-10	U.S. AEC	482637.962	1351857.178	615.88	WOOLPERT
BM-OSDF-2	ON-SITE DISPOSAL FAC	482199.937	1351779.165	615.82	B.L. PAYNE
BM-OSDF-3	ON-SITE DISPOSAL FAC	478850.416	1351740.328	595.61	B.L. PAYNE
BM-OSDF-5	ON-SITE DISPOSAL FAC	483297.439	1351145.734		

FIGURE 2
FERNALD LEGACY MANAGEMENT SITE CONFIGURATION

SCALE: 1"=400'
DATE: 9-9-2004
REVISED: 11-29-2006

TECUMSEH SURVEYING, INC.
4948 CINCINNATI-BROOKVILLE ROAD SHANDON, OHIO 45013
TELEPHONE: 513 738-2134, FAX: 513 738-2756

P 3/07

2.1.3.2 Security of Site Facilities and Infrastructure

Site facilities and structures will be locked when personnel are not present during non-business hours. A gate installed at the main site access location, the south Willey Rd. entrance and at the SR 126 access gate will be locked during non-business hours. Other access points, for example those along Paddys Run Rd., are secured with access controls consisting of chains mounted on posts. The chains are padlocked to eyebolts in the posts. Some site infrastructure such as the OSDF restricted area, the CAWWT and un-housed extraction wells, have fences constructed around them and will be locked to prevent unauthorized access. Controls also include enforcing the land use restrictions, maintaining fences and other infrastructure (as needed), and replacing or updating postings as needed to ensure the security of the site (refer to Figure 2).

There is an on-site Office of Legacy Management presence responsible for weekly, routine patrols or inspections of the Fernald site. These patrols will ensure that no unauthorized use of the site is occurring and that facilities and structures are secure. Daily perimeter inspections will also occur by local law enforcement authorities. Any unauthorized activity noticed is to be immediately reported to the site contact (refer to Appendix C).

The public also has a role in ensuring the security and safety on site. As a result of the presence of an on-site information center (or MUEF, see Section 2.1.3.1), there will be community traffic and a public presence on the site. Final site configuration includes postings at access points and other strategic locations (visible to the public) containing contact information for questions and concerns. The community may call anytime they notice anything out of the ordinary or suspicious, or if they just have questions.

2.1.3.3 Routine Inspection of Property

Formal inspection of site property and infrastructure are conducted on a quarterly basis. Inspections include such things as fences, signs and postings, roadways, pathways, general interior and restored areas of property, access points, and the condition of perimeter areas (refer to Figure 2). Also included in the inspections are the CAWWT and the groundwater restoration system (details are included in Attachment A). Grating that was installed to prevent access to the 60-inch Main Drainage Corridor culvert will be inspected as well. This culvert, along with an adjacent 18-inch culvert that is completely buried, has remained in place even though it has fixed radiological contamination. These culverts are located directly below the OSDF leachate conveyance system and the main effluent line running between the CAWWT and the Great Miami River. Due to their location, these culverts could not have been removed without potentially impacting on-going CAWWT and OSDF operations. Instead, metal grating was installed to prevent access to the 60-inch culvert. Site inspections will ensure that the 60-inch culvert grating is in place and is serviceable, and that the 18-inch culvert is not exposed through erosion or other ground disturbance. The Fact Sheet identifying Clean Buildings and Structures for Beneficial Reuse under Legacy Management provides additional detail regarding these culverts (DOE 2006j).

The attached example inspection checklist (refer to Appendix D) outlines important components of all inspections for the Fernald site (all areas outside the OSDF). The inspections focus on key parameters to ensure that the primary institutional controls for the Fernald site are being maintained. The inspections also include ensuring that prohibited activities are not taking place on site and that restrictions are being adhered to. Consultation with the public, regulatory agencies, local emergency response personnel and other key stakeholders are also part of the quarterly inspections.

DOE also has a voting membership with the Ohio Utility Protection Service. With this membership, DOE will be notified any time an entity will be digging within a quarter of a mile of the site. DOE will then be able to contact the contractor or company doing the work to ensure they are not impacting the Fernald site property.

For the immediate future, the Office of Legacy Management has an on-site manager who is responsible for the management and monitoring of the site post-closure, along with other duties. Part of the manager's duties include managing the organization and conduct of formal site property inspections. The Office of Legacy Management exercises a portion of this responsibility through various subcontracts.

2.2 OSDF

The primary institutional controls for the disturbance and use of the OSDF include continued federal ownership, real estate restrictions (if necessary), and preventing unauthorized use of the OSDF and its associated buffer area. Engineered barriers, such as fencing, gates and locks are also important institutional controls (refer to Figure 2). The institutional controls are summarized in Table 2-2. The table includes a description of the institutional control, other places the institutional control is referenced, and what requirements drive the institutional controls. Primary and secondary points of contact have been established for emergency purposes, to ensure authorized access, and to ensure open communication (refer to Appendix C).

2.2.1 Proprietary Controls and Points of Contact

Proprietary controls are those controls that originate from the responsibilities associated with the ownership of property. The first is that the federal government will maintain ownership of the OSDF property in perpetuity, as stated in the OU2 ROD. Management transferred from the Office of Environmental Management to the Office of Legacy Management, but will always remain under federal ownership. A second is that primary and secondary points of contact have been established for emergency purposes, to ensure authorized access, and to ensure open communication.

2.2.2 Governmental Controls

A fundamental part of governmental controls will be the use of real estate notations and restrictions. Notations on land records or similar restrictive real estate licenses are in place for the land occupied by the OSDF. The Office of Legacy Management will ensure the real estate notations remain in place. DOE will also maintain the responsibility to manage and maintain the OSDF and all other activities needed to ensure that remedies remain effective. Any contract support required to implement specific aspects of maintenance and monitoring will be made aware of all restrictions on use and disturbance of the OSDF.

2.2.3 Preventing Unauthorized Use

Physical barriers to restrict access to the OSDF and its surrounding buffer area include exclusion fencing, gates, and locks, which will be maintained. Signs and postings include information on restrictions, access information, contact information, and emergency information (refer to Figure 2).
All-weather resistant signs around the OSDF say the following:

"CAUTION,
Underground Radioactive Material,
Contact Site Manager Prior to Entry
513-910-6107"

TABLE 2-2
CONTROLS ON DISTURBANCE AND USE OF THE OSDF

CONTROL	REFERENCE	REQUIREMENT	FREQUENCY	SCOPE
PROPRIETARY CONTROLS 1. Establish points of contact	1. PCCIP	1. OAC 3745-27-11(B)(3) OAC 3745-66-18(c)(3) OAC 3745-68-10 40 CFR Sec. 258.61(c)(2) 40 CFR Sec. 265.118(c)(3) 40 CFR Sec. 264.118(b)(3)	1. Initially and when updates are needed	1. Provide primary and backup points of contact to ensure authorized and emergency access. Points of contact are provided in Table 4-2 of the PCCIP. Updates will be provided as needed. The Office of Legacy Management 24-hour emergency number is 877-695-5322.
2. Ownership	2. PCCIP	2. OU2 ROD OU5 ROD	2. NA	2. The federal government will maintain property ownership of the area comprising the OSDF and associated buffer areas. Management will transition from the DOE Office of Environmental Management to the DOE Office of Legacy Management.
GOVERNMENTAL CONTROLS 1. Notations on land records or real estate restrictive license	1. PCCIP	1. OU2 ROD OU5 ROD	1. Annual review	1. If in place, verify on an annual basis real estate restrictions are still in place. Restrictions will be provided in the deed, and proper notifications will be provided as required.
PREVENTING UNAUTHORIZED ACCESS TO THE OSDF 1. Informational devices	1. PCCIP	1. OU2 ROD	1. Quarterly	1. Signs and postings will include information on restrictions, access information, contact information, and emergency information.
2. Engineered barriers	2. PCCIP	2. OU2 ROD	2. Quarterly	2. Access to the OSDF will be physically restricted by means of fences, gates, and locks.

Signs on the access gates to the OSDF contain slightly different information. The gate signs contain the following information:

- The name of the site;
- The international symbol indicating the presence of radioactive material;
- A notice that trespassing is forbidden on this U.S. government-owned site; and
- A local DOE telephone number and a 24-hour DOE emergency telephone number (this same telephone number will be recorded in agreements with local agencies to notify the DOE in the event of an emergency or breach of site security or integrity).

Final configuration for the OSDF includes monuments installed at the corners of the engineered disposal facility, and markers placed on the top and the east and west toes of the cell caps indicating the boundaries between the cells. The corner monuments consist of concrete cylinders 12" in diameter and 48" long. They will be installed to a depth of 42" with 6" of concrete remaining above the surface. A brass plate with pertinent identification and location information will be flush-mounted to the top surface of the concrete. The individual cell markers will be brass plates with pertinent identification and location information attached to a brass rod and flush-mounted to the ground surface.

P 3/07

3.0 CONTROLS TO MINIMIZE HUMAN AND ENVIRONMENTAL EXPOSURE TO RESIDUAL CONTAMINANTS

3.1 FERNALD SITE

An interim residual risk assessment was performed for the second CERCLA five-year review of the Fernald site that showed that residual constituents remain protective of human health and the environment. Section 6.4.4, Review of Post-Remedial Action Contaminant Toxicity Assumptions, in the "Second Five-Year Review report for the FCP" (DOE 2006f) explains the assessment process for residual constituents. Table 6-3, Comparison of the CRARE and Present Risk for All Pathways illustrates the results of the assessment. Results indicate that the risks are below CERCLA limits.

Institutional controls have been established for the Fernald site to minimize the potential of human and environmental exposure to residual contaminants, ensuring it is below acceptable limits. These include inspections and maintenance of engineered systems and infrastructure designed to protect human health and the environment and monitoring and sampling to ensure continued protection from exposure. Further details on these controls are discussed below and are included in Table 3-1.

3.1.1 Fernald Site Inspections

DOE will conduct formal, quarterly Fernald site inspections to ensure there are no activities being conducted on site that would pose a threat to human health or the environment, including in particular the list of prohibited activities (Section 2.1.1). After a year, the frequency of the inspections will be re-evaluated. A list of prohibited activities will be posted at access points. Inspections of the area outside the OSDF will be performed per the Fernald Site Area Post-Closure Inspection Checklist (refer to the example in Appendix D) to ensure that there is no digging or soil removal of any kind (including wind or water erosion), and that infrastructure designed and in place for the protection against human exposure to contaminants, such as fences and signs, are in good condition and functioning as intended. Inspections also include the CAWWT, groundwater restoration system and the active outfall line. Inspection of the active outfall line includes ensuring sufficient soil coverage over the pipeline in an area where the soil is cultivated by a local farmer. The process for checking the soil cover on the outfall line would be to locate the line in the area of concern with surveying and use of a hand probe to check the depth of the line to ensure there is a minimum of 30 inches of cover. The soil cover check will be completed annually in the fall, after the harvest. In the event there is insufficient soil cover over the pipeline, DOE will notify the landowner and the regulators. DOE will then take the necessary corrective actions in consultation with the landowner. Inspection of uncertified areas (Volume I, Figure 3) includes ensuring there is no digging or disturbance of the soils and no tampering with any signs that may be posted to define the areas. Grating that was installed to prevent access to the 60-inch Main Drainage Corridor Culvert will be inspected as well. More frequent inspections may be required under certain circumstances (a pattern of unauthorized activities or uses). If warranted, more frequent inspections will be carried out to ensure site restrictions are being maintained. There will be a workforce present on site on a daily basis as long as there is active remediation. It will be part of the workforce's responsibilities to help ensure that prohibited activities are not taking place.

3.1.2 Surface Water Discharge

Until the groundwater remedy is complete, and as long as there is surface water discharge to the Great Miami River, a NPDES permit or similar permit mechanism needs to be in place. Monitoring and reporting to maintain compliance with the permit requirements will be part of post-closure responsibilities at the Fernald site. Once there is no longer any surface water discharge to the river, the permit for surface water discharge may be closed out. If prior to completion of the remedy it is decided that it is no longer necessary to monitor a particular outfall location, the Office of Legacy Management may request that OEPA remove that particular location from the permit at that time. OEPA issues and maintains the NPDES permit.

TABLE 3-1
CONTROLS TO MINIMIZE HUMAN AND ENVIRONMENTAL EXPOSURE TO RESIDUAL CONTAMINANTS AT THE FERNALD SITE

CONTROL	REQUIREMENT	FREQUENCY	SCOPE
FERNALD SITE INSPECTIONS	OU2 ROD OU5 ROD	Quarterly initially. Frequency will be re-evaluated after the first year and through the CERCLA five year review process	Inspect infrastructure in place for the protection against human exposure to contaminants, such as fences and postings, to ensure proper condition and function. • Ensure there is no removal of soil by wind or water erosion. • Inspect water control structures, swales and discharge points. • Inspect access control grating on the 60-inch Main Drainage Corridor culvert • Inspect to ensure prohibited activities, such as digging, off-road travel, camping, or hunting, are not taking place on site.
SURFACE WATER DISCHARGE INSPECTIONS	NPDES	Annually.	• Inspect surface water drainages and discharge to ensure water is not being impacted by other means, and that drainages are functioning properly. • Discharge points to Paddys Run will be inspected for general water quality conditions (e.g., presence/absence of scum, foam, oil sheen, turbidity, color, other putrescent or unusual material). Upgradient drainage channels may be inspected for excessive erosion and obstructions. • Inspect active outfall line to ensure sufficient soil cover is present. • The Great Miami River will be inspected at the point of the Fernald site discharge for the same general water quality conditions identified above.
GROUNDWATER REMEDY SAMPLING AND MONITORING	IEMP	Frequency of sampling and monitoring of groundwater is dependent upon the effectiveness of the remediation efforts and will vary over time.	• Monitor groundwater to ensure remedy is functioning properly until remedy certification is complete. Details are provided in the IEMP.

3.1.3 Groundwater Remedy and Monitoring

The Institutional Controls to preclude the use of groundwater in the off-property area where groundwater contamination is greater than the 30 ppb uranium final remediation level consist of:

1) The DOE funded public water system, which provided an alternate water supply for residents in the areas affected by groundwater contamination from the Fernald Site.
2) The Hamilton County water well permitting process. Drinking water wells cannot be installed until a permit has been obtained from the Hamilton County Health Department. DOE will ensure that the Health Department is aware of the off-property areas where groundwater contamination is greater than 30 ppb uranium. DOE has sent a letter and map documenting the contaminated area to the Hamilton County Health Department and request that no permits be issued in this area given the contamination and the ongoing aquifer remediation (DOE 2006i). Additionally, the letter requests that DOE be notified of any proposed drilling activities in the vicinity of the plume. If DOE is made aware of any drilling activities in the area of the off-site plume the Regulators must be notified.
3) Daily well field operational inspections and routine groundwater sampling. Operational personnel will be making daily rounds of the South Plume well field and will be instructed to notify management of any unusual activity in the area (e.g. well drilling). Groundwater sampling personnel will also be in area of the South Plume for routine groundwater monitoring and will also be instructed to notify management of any unusual activities.

Aquifer restoration operations and maintenance activities are part of an ongoing remedial action governed by the OU5 ROD. The requirements for the operations and maintenance activities are outlined in the OMMP (DOE 2006a) (refer to Attachment A). The OMMP, as originally written, defines the operating philosophy for the extraction and re-injection treatment systems (re-injection is not being used at this time); establishment of operational constraints and conditions for given systems; and the establishment of the process for reporting and instituting corrective measures to address exceedances in discharge limits. How to address exceptional operating conditions is also addressed.

Section 2.0 of the OMMP discusses the general commitments of the aquifer restoration. Provided are details regarding the aquifer cleanup levels, discharge limits, groundwater treatment capacity, groundwater treatment decisions, extraction rates and injection rate and quality (although injection is no longer used).

Section 3.0 of the OMMP goes into more specific detail about the design of the groundwater remediation systems, well field designs, and pump details. Section 4.0 discusses the projected flow during remediation activities. Section 5.0 discusses the Operations Plan, Section 6.0 discusses Operations and Maintenance, and Section 7.0 discusses Roles and Responsibilities. Sections 6.0 and 7.0 provide information that pertains directly to institutional controls.

Groundwater will be treated to help meet uranium discharge limits specified in the OU5 Record of Decision until discharge limits can be achieved by blending untreated water alone. Eliminating groundwater treatment will not be pursued: 1) at the expense of compromising mass removal; or (2) if significant deviation from desired aggressive pumping rates is required. The CAWWT will undergo D&D once it has been documented to EPA and OEPA that the facility is no longer needed to meet uranium discharge limits.

When the groundwater remedy has been certified complete by the DOE (which is defined in the Fernald Groundwater Certification Plan (DOE 2006g)) and approved by the U.S. EPA, well field infrastructure will be decommissioned and dispositioned. All needed soil excavation and certification associated with

the D&D of the CAWWT and removal of well field infrastructure will be in accordance to Site Wide Excavation Plan Requirements.

Post-remedy long-term groundwater monitoring will be conducted. Requirements are defined in the Fernald Groundwater Certification Plan and will be implemented through the IEMP (Attachment D of the LMICP). Post remedy long term groundwater monitoring will be evaluated as part of the CERCLA five-year reviews.

3.2 OSDF

Institutional controls are necessary for the OSDF and its buffer area to ensure the prevention of human and environmental exposure to residual contaminants. Further details about these controls are discussed below and are included in Table 3-2. Details regarding OSDF inspection and maintenance are included in the PCCIP (Attachment B). The OSDF was constructed to permanently contain impacted materials derived from the remediation of the OUs at the Fernald site. All material placed in the OSDF was required to meet pre-established WAC. The WAC are presented in Table 3-1 of the PCCIP. Table 3-2 of the PCCIP provides a description of the types of material or material categories that were allowed in the OSDF. The design and construction of the OSDF is described in Section 3.0. Section 4.0 of the PCCIP discusses the institutional controls for the OSDF, which have been included and summarized in this IC Plan. Table 4-1 of the PCCIP shows institutional controls for the OSDF as they were identified in the OU2 and OU5 RODs.

Section 5.0 of the PCCIP discusses environmental monitoring activities that are necessary to continue during the post-closure care period, including air monitoring, groundwater monitoring, and other media (i.e., surface water, vegetation, etc.).

Section 6.0 addresses routine inspections, which are important institutional controls. Section 3.2.1 of this IC Plan addresses these inspections in detail.

Also addressed in the PCCIP are unscheduled inspections (Section 7.0), custodial monitoring and contingency repairs (Section 8.0), and emergency notifications (Section 10.0).

3.2.1 OSDF Inspection and Maintenance

DOE will conduct inspections and maintenance on the cap and cover system. Inspections will be conducted on a quarterly basis for a period of two years following the completion of cells 7 and 8. The frequency of inspections will be re-evaluated following the two years of quarterly monitoring. Custodial and preventative maintenance and unscheduled inspections will be conducted as needed. Table 3-2 of this IC Plan provides current details on the required inspection and maintenance.

Routine inspections include monitoring the health of the vegetative cover; the presence of deep-rooted woody species; the existence of burrowing animals; the extent of surface erosion or cracking; subsidence, if any; extent of any leachate seeps; integrity of runoff controls; and integrity of benchmarks. If determined necessary or appropriate, the frequency of the routine inspections may be revised through the CERCLA five-year reviews. Routine custodial maintenance includes upkeep of the vegetative cover; general mowing; clearing of debris and woody plants, and reseeding.

TABLE 3-2
CONTROLS TO MINIMIZE HUMAN AND ENVIRONMENTAL EXPOSURE TO RESIDUAL CONTAMINANTS AT THE OSDF

CONTROL	REFERENCE	REQUIREMENT	FREQUENCY	SCOPE
OSDF INSPECTION AND MAINTENANCE 1. Routine OSDF cap inspection	1. PCCIP	1. OAC 3745-66-18(A) and (C) 40 CFR Sec. 264.118(b)(2) 40 CFR Sec. 265.118(c)(2) OU5 ROD	1. Quarterly for two years following completion of cells 7 and 8. The monitoring schedule will be re-evaluated after the two years of quarterly monitoring	1. Detect and record any change of the following: • General health, density and variety of vegetative cover • Presence of deep rooted woody species. • Evidence of burrowing animals on the cover • Presence, depth, and extent of erosion or surface cracking, indicating possible cap deterioration • Visibly noticeable subsidence, either locally or over a large area, any sufficient enough to pond water • Presence and extent of any leachate seeps • Integrity of runon and runoff control features • Integrity of benchmarks The process for contingency planning and notification is provided in Section 4.0.
2. Unscheduled OSDF cap inspection	2. PCCIP	2. OU5 ROD	2. As needed	2. Unscheduled inspections will be carried out as needed under specific circumstances (e.g., follow-up on maintenance, after significant natural events). Follow-up or contingency inspections will be conducted no more than 30 days after repair (refer to Section 4.0) to investigate and quantify specific problems encountered during a routine scheduled inspection, special study, or other DOE/regulatory agency activity. Follow-up inspections determine whether the cover/cap stability is threatened, and evaluate the need for maintenance/repair/corrective action. Contingency inspections may be situation-unique inspections ordered by DOE or regulatory agencies.

TABLE 3-2
(Continued)

CONTROL	REFERENCE	REQUIREMENT	FREQUENCY	SCOPE
3. Routine OSDF cap custodial and preventative maintenance	3. PCCIP	3. OAC 3745-66-18(A) and (C) 40 CFR Sec. 264.118(b)(2) 40 CFR Sec. 265.118(c)(2) OU5 ROD OU2 ROD	3. As needed (mowing of entire OSDF will occur once annually in the spring)	3. Routine custodial and preventative maintenance consists of the following: upkeep of the vegetative cover, general mowing, clearing of debris, removal of woody weeds and seedlings, reseeding
4. Routine OSDF site area inspection	4. PCCIP	4. OAC 3745-66-18(A) and (C) 40 CFR Sec. 264.118(b)(2) 40 CFR Sec. 265.118(c)(2) OU5 ROD OU2 ROD	4. Quarterly for two years following completion of cells 7 and 8 The monitoring schedule will be re-evaluated after the two years of quarterly monitoring	4. • Inspect the adjacent area within approximately 0.25 miles of the OSDF buffer area. Describe evidence of land use changes. • Evaluate natural drainage courses in the immediate vicinity of the OSDF to determine whether there is a threat to the OSDF integrity. Walk approximately 1,000 feet of adjacent natural drainage courses and note unusual or changed sediment deposits, large debris accumulations, man-made or natural constrictions, and recent or potential channel changes. • Evaluate and record the development of gullies. • Evaluate growth of vegetation in channels. • Determine the condition and required maintenance of on-property roads. • Inspect and record the area adjacent to the OSDF for erosion channels, accumulations of sediment, evidence of seepage, and signs of animal or human intrusion.
5. Unscheduled OSDF site area inspection	5. PCCIP	5. OU5 ROD OU2 ROD	5. As needed	5. Investigate reports that site integrity may be compromised. Follow-up or contingency inspections will be conducted to investigate and quantify specific problems encountered during a routine scheduled inspection, special study, or other DOE/regulatory agency activity. Determine whether the support systems are threatened, and evaluate the need for maintenance/repair/corrective action. Contingency inspections are situation-unique inspections ordered by DOE when it receives information indicating that site integrity has been or may be threatened.

TABLE 3-2
(Continued)

CONTROL	REFERENCE	REQUIREMENT	FREQUENCY	SCOPE
6. Routine OSDF site area custodial and preventative maintenance	6. PCCIP	6. OAC 3745-66-18(A) and (C) 40 CFR Sec. 264.118(b)(2) 40 CFR Sec. 265.118(c)(2) OU5 ROD	6. As needed (mowing will occur annually in the spring)	6. • Repair/replace fencing, gates, locks, and signs due to normal wear, severe weather conditions, or vandalism. • Mow/clear undesired woody vegetation, reshape, reseed, repair banks, unplug culverts, and clean out channels of runon/runoff diversion channels.
LEAK DETECTION/ LEACHATE MONITORING 1. OSDF leachate and environmental monitoring	1. GWLMP and IEMP	1. OAC 3745-27-6 OAC 3745-54-90 through 99 (applicable portions)[a] DOE 435.1	1. Varying frequencies depending on sampling stage (e.g., baseline)	1. • A routine monitoring program will be maintained for four zones within and beneath the OSDF. These zones include the LCS, the LDS, perched water within the glacial overburden, and the Great Miami Aquifer (GWLMP Section 3.2.1). Samples from the four zones will be collected and analyzed pursuant to requirements set forth in a future revision to the GWLMP. • Environmental monitoring will be conducted post-closure. The specific parameters and frequencies will be identified in the IEMP.
LEACHATE MANAGEMENT	GWLMP	OU5 ROD GWLMP	As needed	Leachate will be treated on site until weekly amounts collected are too small to continue on-site treatment. At that time, treatment will be off site.

[a] **OAC 3745-54-90 through 99 are not applicable in entirety (Refer to the OSDF GWLMP – Appendix A)**

Monitoring and management of the OSDF vegetative cover will be carried out to optimize the establishment and continued growth of the native grass mix specified (OSDF Specification #2930) and seeded on the OSDF cap. Monitoring will consist of the collection of data to determine the percent native cover on the OSDF cap. Data collection on the Cell 1 Cap occurred in summer 2005, the fourth growing season after seeding. On the remaining cell caps, data collection will first occur four years after the seeding of each cap. The schedule for the first round of data collection on each cap will be as follows: Cell 2 in 2007; Cell 3 in 2008; Cells 4 through 7 in 2009; and Cell 8 in 2010. A grid will be established on each cell cap. Data will be collected from random sampling locations within the grid. Percent native cover data will be collected at each sampling location to determine the overall percent native cover for the cap. Data will be collected one time during each sampling event in late summer. The results of data collection will be issued by the Office of Legacy Management to the regulatory agencies as soon as practical after the data have been compiled and processed, but no later than October 15 of the collection year.

Routine management of the OSDF cap includes annual mowing in the spring to control woody vegetation. In the event that the spring mowing is not possible, it will be postponed until the following fall. Baling of the cut grasses on the cell caps will occur on a three-year rotation to remove thatch and promote growth of the prairie grass. Selective herbicide will be used as needed to control invasive or nuisance plants that are identified on the cap. In order to maximize the growth of prairie grass, controlled burning of the cell cap would be the best management tool. Working with local stakeholders and regulators, the Office of Legacy Management will maintain the cap vegetation, including the possibility of burning to properly manage the selected seed mixture. Following the collection of data from the Cell 1 Cap in the summer of 2005, a decision was made to mow the grass and reseed where necessary. Decisions regarding the management of the remaining cell caps will be made after percent native cover data is collected per the above schedule. Once baling has occurred on a specific cell cap, the practice will be continued on a three-year rotation thereafter.

As stated above, the goal will be to optimize the establishment of native grasses on the cell cap. DOE and the Regulatory Agencies agree that the goal is not necessarily to establish a functioning prairie on the OSDF Cap. Native grasses (e.g., Big Bluestem, Little Bluestem, Switch Grass) are more drought-tolerant than cool season grasses and will provide additional stability due to their complex root structures. A pass/fail criterion will not be set for the performance of the native grasses on the OSDF cap. However, a goal of 50 percent native cover has been considered for restored prairies on the site and will be used as a goal for native grasses on the OSDF. If the concentration of native grasses remains at or above 50 percent, management and monitoring will continue as outlined above. If the concentration of native grasses falls below 50 percent, the Office of Legacy Management will work with the Regulatory agencies to develop an appropriate plan to increase the concentration of native grasses. Steps taken may include, but are not limited to: selective reseeding, installing native grass plugs; increased use of selective herbicide, further consideration of controlled burns on the cap, or some combination thereof. The requirement to maintain 90 percent cover at all times after seeding on the OSDF cap will remain unchanged to minimize erosion of the cap. The 90 percent cover requirement applies to all vegetation on the cap and is not specific to native grasses.

Unscheduled inspections will be conducted as needed if specific circumstances warrant. An example would include following up on the completion of a maintenance action or cap inspection after an unusually large storm event. Based on the results and determinations made from the inspections, DOE will take appropriate actions to address any identified problems.

Maintenance and monitoring of the general support systems for the OSDF will include ensuring physical access controls and restrictions are maintained, routine inspections of the OSDF and surrounding area, routine maintenance activities, and environmental monitoring. Table 3-1 of this IC Plan provides additional detail on the required monitoring and maintenance.

The federal government will remain the property owner and access to the OSDF and associated buffer area will continue to be restricted in perpetuity by means of fences, gates, locks, and warning signs (refer to Figure 2). Access will be limited to personnel conducting inspections, custodial maintenance, and corrective action, and will be authorized by the federal government only.

Routine inspections include evaluating the condition of physical access controls (fences, gates, locks, and signs); observing adjacent properties for evidence of land use changes; evaluating natural drainage courses in the immediate vicinity; and inspecting the general area for erosion, excess sediment, seepage and signs of human or animal intrusion. If determined necessary or appropriate, the frequency of the routine inspections may be revised following closure through the CERCLA five-year reviews. More frequent monitoring is always a possibility, due to changes in the cap or surrounding areas; however, a decrease in frequency would require discussion, review, and approval at the time of the five-year review.

3.2.2 Leak Detection/Leachate Monitoring

Routine OSDF leak detection and leachate monitoring is currently governed by the GWLMP (refer to Attachment C). Table 3-2 of this IC Plan includes some of the detail. Section 3.0 of the GWLMP provides the regulatory analysis and strategy for the OSDF monitoring. The regulatory drivers come from the ARARs identified in the OU2, OU3, and OU5 RODs. Section 4.0 of the plan provides significant detail on the OSDF leak detection monitoring program. The text includes the program elements, monitoring frequencies, selection of analytical parameters and data evaluation. Section 5.0 is a discussion of the leachate management monitoring program. It discusses the management approach and monitoring needs. Section 6.0 provides the reporting requirements, and notification and response actions for when there is excessive leak detection, which could be an indication of a failure in the cap or liner and could pose a threat to human health or the environment. Table 6-1 of the GWLMP outlines these actions in detail.

3.2.3 Leachate Management

Also involved in the maintenance and monitoring of the OSDF system is the management of the leachate that enters the LCS. Additional information regarding leachate management is also found in Appendix D of the GWLMP. Leachate will be treated through the CAWWT until the CAWWT is no longer available (anticipate that the CAWWT will be required at least until the 2010 – 2011 time frame). A passive leachate system is an option after the CAWWT is no longer available. Long-term treatment needs for the

OSDF leachate during the period after the CAWWT is decommissioned will be re-evaluated in 2009 (prior to the shut-down and D&D of the CAWWT). It is anticipated that by 2009, approximately three years after the last cell is capped, the leachate flow will be stabilized at a low level and the leachate chemistry will be stable and well defined. The quantity of leachate collected, treated and discharged will continue to be documented. Leachate will be sampled and analyzed for a set of parameters specified in the OSDF GWLMP.

4.0 CONTINGENCY PLANNING

Site inspections, monitoring and maintenance activities are designed to identify problems before they develop into a need for corrective action. In the unlikely case that a natural event, vandalism, or other event, threaten the integrity or operation of the OSDF or remainder of the site, corrective actions will be carried out to mitigate the problem. In addition, DOE will evaluate the factors that caused the problem and ensure that the possibility of recurrence is minimized or avoided. The plan to address unacceptable conditions or disturbances will be included in the Legacy Management Health and Safety Plan (DOE 2005).

To the extent that contingency actions can be anticipated or planned, they have been, and will continue to be, incorporated into the LMICP or attached support plans. Unanticipated contingency actions will be subject to CERCLA processes prior to implementation. Stakeholders, regulatory agencies, and the public will be notified of any unanticipated contingency actions under CERCLA that has to be implemented.

4.1 UNACCEPTABLE DISTURBANCES OR USE

In the event that an unacceptable condition or disturbance occurs at the Fernald site during legacy management, corrective actions will be employed and appropriate notifications will occur. Unacceptable conditions regarding disturbance or use of the Fernald site may include: unauthorized access to the site (e.g., off-road vehicles); attempts to use soil or water on the site in an inappropriate manner; attempts to access the OSDF; or damage to fencing, gates or postings. Section 2.1.1 provides an extensive listing of those actions which are prohibited and apply to all unauthorized personnel. Unacceptable conditions related to exposure to residual contaminants could include damage or disruption to the OSDF or attempts to utilize groundwater still undergoing remediation.

Contingency inspections are unscheduled situation-unique inspections ordered by the DOE when it receives information indicating that site integrity has been or may be threatened. Events that could trigger contingency inspections include severe vandalism, intrusion by humans or livestock, severe rainstorms, or unusual events of nature such as tornadoes or earthquakes. If any unacceptable activities were found to be occurring on-site, DOE-LM will implement the appropriate corrective actions, both to repair damage if required, and to prevent or reduce the chances of reoccurrence. Some of the possible corrective actions DOE-LM may consider are: increasing the frequency of surveillances by site personnel, requesting an increase in patrols by local law enforcement personnel, adding surveillance cameras, evaluating and possibly revising current postings of the site; and/or prosecuting individuals caught engaging in prohibited, destructive or disruptive behavior.

Events that have caused severe damage to the OSDF or that pose an immediate threat to human health and the environment will be immediately reported to the U.S. EPA and OEPA. Detailed information regarding OSDF contingency inspections, corrective actions and reporting are contained in Attachment B, Post-Closure Care and Inspection Plan.

Minor maintenance actions such as seeding small areas, minor erosion repairs on the OSDF or other parts of the site, replacement of postings and signs, minor fence and gate repairs, and minor maintenance of site

infrastructure will not be subject to the notification process described above. The need for minor maintenance will be identified on routine inspection forms issued to U.S. EPA and OEPA and will be subject to follow-up inspections as discussed above.

4.2 CONTAMINATED SOIL AND/OR DEBRIS

In the event that suspect debris and/or small areas of isolated soil that could potentially present radiological issues are discovered, DOE will isolate the area and begin investigative activities. Radiological Control Technicians will conduct a scanning survey of the debris or soil. For debris, DOE approved limits for contamination from residual radioactive material will be used to determine the proper disposal method. For soils, areas where instrument readings indicate uranium, thorium, or radium are present above a value corresponding to three times its FRL, will be marked for additional investigation. Debris that does not meet the unrestricted release criteria and soils that exceed the cleanup criteria will be transported to an offsite disposal facility for disposal in accordance with the terms of the ACA and EPA's Off-site Rule. If unexpected large scale soil contamination is identified, the protocol in the *Sitewide Excavation Plan* will be followed, which is the same protocol that will be used for the uncertified areas as described in Volume I Section 2.4.4.

Disposal of any contaminated debris or soil will be handled on a case-by-case basis once adequate historical knowledge of the soil is compiled and any additional characterization is complete. Until then, temporary storage in covered stockpiles or drums (depending on volume) will be established and a path forward through final disposition will be developed for review and approval by appropriate agencies as necessary.

Although not expected, any tagged Fernald property items or items suspected to be from Fernald, that are found on-site or off-site are to be reported to the Fernald Site manager by calling 513-910-6109 during business hours or the 24-hours DOE-LM emergency number at 970-248-6070 or 877-695-5322.

4.3 UNEXPECTED DISCOVERIES

Although limited excavation activities on the Fernald site are expected to occur, there will be excavations in the future when the time comes to remove the CAWWT and associated aquifer restoration infrastructure. If unexpected cultural resources are identified within an excavation, the site procedure for handling unexpected cultural resource discoveries will be followed. This includes isolating the affected area until the on-call subcontractor can perform the necessary investigation. This follows the same process used during remediation and restoration activities. The DOE will continue to consult with the appropriate parties, such as the State of Ohio Historic Preservation Office, pursuant to federal regulators to determine an appropriate course of action as necessary.

4.4 NOTIFICATION PROCESS

The Office of Legacy Management will notify U.S. EPA and OEPA of any institutional control breaches and DOE's plan for correcting them upon discovery of the situation. Stakeholder notifications will be handled as deemed appropriate by DOE. Any activity that is inconsistent with the institutional control objective or use restrictions will be addressed by the Office of Legacy Management as soon as practical,

but in no case will the process be initiated later than 10 days after the Office of Legacy Management becomes aware of the violation.

The DOE will notify U.S. EPA and OEPA regarding how the DOE has addressed or will address the breach within 10 days of sending U.S. EPA and OEPA notification of any activity that is inconsistent with the institutional control objective or use restriction or any action that interferes with the effectiveness of institutional controls. A follow-up inspection will occur within 30 days of the completion of any corrective action. The results of follow-up inspections will be provided to U.S. EPA and OEPA.

4.5 COORDINATION WITH OTHER AGENCIES

The Office of Legacy Management sent letters to the Hamilton County Sheriff's Department, Butler County Sheriff's Department, and Ross, Crosby and Morgan Township police and fire officials requesting that they notify the Office of Legacy Management in the event they observe any unauthorized human intrusion or unusual natural event.

The Ohio Earthquake Information Center located at Alum Creek State Park in Delaware County, Ohio was sent a letter by the Office of Legacy Management requesting that they notify the Office of Legacy Management in the event of an earthquake in the vicinity of the Fernald site.

The Office of Legacy Management will monitor emergency weather notification system announcements and has requested notification from the National Weather Service (either Wilmington or Cincinnati) of severe weather alerts.

To notify the Office of Legacy Management of site concerns, the public may use the 24-hour security telephone numbers monitored at the DOE Office at Grand Junction. The 24-hour security telephone numbers will be posted at site access points and other key locations on the site.

THE 24-HOUR EMERGENCY NUMBER
970-248-6070 or 877-695-5322

.

Intentionally left blank

5.0 INFORMATION MANAGEMENT AND PUBLIC INVOLVEMENT

5.1 INFORMATION MANAGEMENT

The retention of records and dissemination of information over the long-term is another critical aspect of legacy management. Records that are needed for legacy management purposes will be managed by the Office of Legacy Management. Records will be dispositioned in accordance with DOE requirements at the National Archives and Records Administration or a federal records center for their required retention period or destroyed once they have reached the required retention. Copies of selected records documenting past remedial activities (e.g., CERCLA Administrative Record [CERCLA AR]) will be retained by the Office of Legacy Management for legacy management purposes on the site at the MUEF. In addition, newly acquired CERCLA AR records will be available to stakeholders.

Any centralized system to provide stakeholders with access to information will also be managed by the Office of Legacy Management. Copies of selected information or data documenting past remedial activities (e.g., soil certification) and the design and contents of the OSDF will be retained and managed by the Office of Legacy Management for institutional control purposes. In addition, newly acquired information or data related to remedy performance will be readily available to stakeholders and the public. The Office of Legacy Management currently uses the Geospatial Environmental Mapping System, a web-based application, to manage and provide stakeholders, the agencies, and the public with Internet access to electronic data.

Administrative Record documents for the Fernald closure site will be scanned into industry-standard searchable Adobe Acrobat PDF format for viewing over the Internet. Document meta-data is stored in a FileMaker Pro database. The database also contains pointers to the PDF images of the documents.

Features of the public access website include a search engine that allows the user to search by document number, document date, document type, document title, description and site. Additionally, the user can search for text contained within the document. Search results can be sorted by document number, document date or document type. Document content is displayed using the Adobe Acrobat Reader software.

The Office of Legacy Management, S.M. Stoller Corporation, Office of Environmental Management and Fluor Fernald, Inc. worked together to identify existing databases that will be transitioned to the Office of Legacy Management. For each system to be transitioned, a specific plan for transition and validation is developed. Final transmission of each system will follow final updates of the data and will occur between now (for systems no longer being updated) to approximately 180 days after the Declaration of Project Completion. Details of this process, including schedule and responsibilities, are being managed via the Fernald Integrated Transition Matrix, which is a planning tool used jointly by the Office of Environmental Management, the Office of Legacy Management, Fluor Fernald, and S.M. Stoller Corporation to coordinate all transition activities. Each functional area will be further detailed in the corresponding Fernald Responsibility Transition Package, currently under development. The Office of Legacy Management will maintain all transitioned data in centralized systems that support the Office of Legacy Management-wide

enterprise and will be responsible for ensuring technology updates are adequate to allow future access. Searchable maps of the site for post-remediation soil concentrations will be developed as part of the Residual Risk Assessment.

5.1.1 Fernald Site Data and Information

Inspection data will include information from inspections of the general site area, perimeter, access points, infrastructure, and signs and postings. The Fernald Site Inspection Form (refer to Appendix D) will be used to collect the data and document the inspection.

The IEMP (Attachment D) defines environmental monitoring requirements for the Fernald site. Monitoring data will include all environmental monitoring data associated with the site, including groundwater remediation data and ecological restoration monitoring data.

5.1.2 OSDF Data and Information

Inspection data will include information from inspections of the OSDF cap, infrastructure (e.g., LCS/LDS pipe networks), perimeter fencing, buffer area, and signs and postings. The OSDF Cell Post-Closure Inspection Checklist (refer to Appendix D) and the LCS/LDS Inspection Checklists will be used to collect the data and document the inspections.

Monitoring data will include monitoring of the LCS, groundwater monitoring and any other environmental monitoring data that pertains to the OSDF and its function (refer to Attachment C, OSDF GWLMP).

5.1.3 Reporting

The annual site environmental report will continue to be submitted to U.S. EPA,OEPA, and key stakeholders on June 1 of each year. It will provide information on institutional controls, monitoring, maintenance, site inspections and corrective actions while continuing to document the technical approach and summarizing the data for each environmental medium, along with summarizing CERCLA, RCRA, and waste management activities. The report will also include water quality and water accumulation rate data from the on-site disposal facility monitoring program. The summary report serves the needs of both the regulatory agencies and other key stakeholders. The accompanying detailed appendices of the site environmental report are intended for a more technical audience including the regulatory agencies and will serve to fulfill National Emissions Standards for Hazardous Air Pollutants reporting requirements, as necessary. Additionally there will be continued reporting requirements as required under other regulatory programs that will be addressed outside the annual site environmental reports (e.g., NPDES monthly discharge reports).

Once it is determined that the institutional controls are functioning, the remedy is performing as intended, and the groundwater remediation is effective, the reporting frequency may be re-evaluated. In the event of unacceptable conditions or disturbance, more frequent notification and reporting will be required as defined in Section 4.0.

Under CERCLA, a review of the remedy at sites where some level of contaminants is left such that use of the site is limited is required every five years. The CERCLA five-year reviews at the Fernald site will focus on the protectiveness of the remedies associated with each of the five OUs. Also included will be summaries of the inspections conducted for the OSDF, the CAWWT facility, the groundwater restoration system, and the active outfall line to the Great Miami River. To facilitate the review, a report addressing the ongoing protectiveness of the remedies will be prepared and will be submitted to the U.S. EPA and OEPA. The institutional controls portion of the report will include the data collected from monitoring and sampling; summaries of the inspections conducted of the Fernald site and OSDF site and cap during the five-year period; and a discussion on the effectiveness of the institutional controls. If it is determined that a particular control is not meeting its objectives then required corrective actions will be included. The review may lead to revisions to the monitoring and reporting protocols.

5.2 PUBLIC INVOLVEMENT

The public played a very important role in the remediation process at the Fernald site and stakeholders remain very involved in legacy management. DOE has written the CIP (Attachment E) to document how DOE will ensure the public's continued involvement in a wide variety of site related decisions and activities, including post-closure monitoring. The CIP is a CERCLA required document, replacing the current Community Relations Plan, also required under CERCLA. Although the CIP contains all of the requirements for public involvement under CERCLA, it also includes DOE's policy for public involvement, which extends beyond CERCLA requirements. Therefore, the CIP clearly identifies those elements that are not enforceable elements.

Various stakeholder groups meet on a regular basis with Fernald site employees for updates on the latest activities at the site. DOE also holds regularly scheduled meetings with these groups and the public to share current site information (progress updates). The stakeholders and the public will remain involved in legacy management activities, and will continue to play an active role in helping DOE make critical legacy management decisions.

5.2.1 Current Public Involvement via Groups and Organizations

Several groups followed the remediation and cleanup process at the Fernald site, including the Fernald Citizens Advisory Board (FCAB), Fernald Residents for Environmental Safety and Health (FRESH), and the Fernald Living History Project. The FCAB was formed to formulate cleanup policy and to help guide the cleanup activities at the site. Representatives, including local residents, governments, businesses, universities, and labor organizations, comprised the advisory board membership. In 1995, the FCAB issued recommendations to DOE on remedial action priorities, cleanup levels, waste disposition alternatives, and future uses for the Fernald site property. The FCAB was actively involved in the final remediation and restoration activities for the Fernald site with monthly full board meetings and meetings of the FCAB Stewardship Committee.

The FCAB had co-sponsored (with FRESH, the Community Re-use Organization, and the Fernald Living History Project) four "Future of Fernald" workshops. The workshops were open to the public and gave stakeholders the opportunity to provide input on the final public-use decisions as described in the Master

Plan for Public Use of the FEMP (DOE 2002). The later workshops led to the recommendation for a Multi-use Education Facility at the site.

The FCAB also worked with the Natural Resource Trustees and DOE to assist in the development of the Legacy Management Plan. As mentioned in previous sections, the future use and amenities at the site are directly tied to the degree of legacy management that will be necessary. DOE worked closely with the FCAB, until September 2006 when the FCAB held their final meeting.

FRESH was formed by local residents in 1984 and has played an important role in providing community input on the characterization and remediation of the Fernald site.

A list of other stakeholders considered to be critical for legacy management planning at the Fernald site is given below. Additional stakeholders may be identified in the future.

- Local government and enforcement agencies
- Local volunteer organizations
- Local residents
- Universities
- Local school groups
- Environmental organizations
- Native American Tribes
- Native American organizations
- NRTs – Natural Resource Trustees
- Regulatory Agencies
- Fernald Living History, Inc.
- Crosby Township Historical Society
- Local businesses

5.2.2 On-going Decisions and Public Involvement

The following decisions will receive ongoing consideration during legacy management as appropriate.

- Continued evaluation of the regulatory requirements that drive legacy management activities at the Fernald site. The database developed by Florida International University (FIU 2002) is a starting point in the identification of applicable requirements, but additional review and decision-making is still required.
- The design of the MUEF and its contents needed to provide site information to the public and support institutional controls.

Input on future legacy management planning decisions will occur through formal document reviews, community meetings, roundtables, workshops, and other forums. Currently, DOE holds quarterly briefings for interested stakeholders. DOE anticipates continuing these updates using a similar forum/format throughout legacy management. The CIP (Attachment E) also discusses methods of reporting to the public.

Another process involving the public is the CERCLA five-year review. The five-year reviews are performed pursuant to CERCLA §121, The National Contingency Plan (40 CFR Part 300) and the Comprehensive Five-Year Review Guidance, June 2001. These regulations state that a public comment and review period will be provided so that interested persons may submit comments. Input from the public regarding legacy management of the site and the ongoing groundwater remediation will always be considered, just as it has during the remediation of the site.

5.2.3 Public Access to Information

The Office of Legacy Management will continue to make available to the public documents pertaining to the Fernald site. A public reading room is currently located at the Delta Building, 10995 Hamilton-Cleves Highway, Harrison, OH, 45030, but will be relocated at the MUEF. A copy of the CERCLA Administrative Record will be stored at this location. The CERCLA Administrative Record will be available in both paper copy and digitized formats.

Administrative Record documents for the Fernald closure site will be scanned into industry-standard searchable Adobe Acrobat PDF format for viewing over the Internet. Document meta-data is stored in a FileMaker Pro database. The database also contains pointers to the PDF images of the documents.

Features of the public access website include a search engine that allows the user to search by document number, document date, document type, document title, description and site. Additionally, the user can search for text contained within the document. Search results can be sorted by document number, document date or document type. Document content is displayed using the Adobe Acrobat Reader software. The CERCLA Administrative Record will be updated as new documents are created.

9
3/07

REFERENCES

Florida International University (FIU), 2002, "2006 and Beyond: Defining Long-Term Stewardship Requirements at Fernald," Florida International University, Miami, FL, November.

U.S. Department of Energy (DOE), 2006a, "Operations and Maintenance Master Plan for the Aquifer Restoration and Wastewater Project," 2505-OM-001, Revision 3, Final, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, June.

U.S. Department of Energy (DOE), 2006b, "Post-Closure Care and Inspection Plan; On-site Disposal Facility," 20100-PL-010, Revision 4, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, June.

U.S. Department of Energy (DOE), 2006c, "Groundwater/Leak Detection and Leachate Monitoring Plan: On-site Disposal Facility," 20100-PL-009, Revision 3, Final, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, June.

U.S. Department of Energy (DOE), 2006d, "Integrated Environmental Monitoring Plan," 2505-WP-0022, Revision 5A, Draft Final, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, June.

U.S. Department of Energy (DOE), 2006e, "Community Involvement Plan," Office of Legacy Management, Final, Revision 2, June.

U.S. Department of Energy (DOE), 2006f, "Second Five-Year Review Report for the FCP," 2500-RP-0044, Revision B, Draft, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, March.

U.S. Department of Energy (DOE), 2006g, "Fernald Groundwater Certification Plan," Fluor Fernald, DOE Fernald Area Office, Cincinnati, OH, April.

U.S. Department of Energy (DOE), 2006h, "Fernald Project Health and Safety Plan," DOE-LM/1324-2006, Revision 1, S.M. Stoller Corporation, Grand Junction, CO, September.

U.S Department of Energy (DOE), 2006i, DOE-0184-06, Letter to Hamilton County General Health District, August

U.S. Department of Energy (DOE), 2006j, "FACT SHEET, The Fernald Closure Project Identifies Clean Buildings, Critical Structures, and Construction Materials for Beneficial Reuse Under Legacy Management", Fluor Fernald, DOE Fernald Area Office, Cincinnati, OH, December.

U.S. Department of Energy (DOE), 2002, "Master Plan for Public Use of the Fernald Environmental Management Project," 20900-PL-0002, Revision A, Draft, Fluor Fernald, DOE, Fernald Area Office, Cincinnati, OH, February

U.S. Department of Energy (DOE), 2001a, "Explanation of Significant Differences for Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH, October.

U.S. Department of Energy (DOE), 2000, "Institutional Controls in RCRA and CERCLA Response Actions at Department of Energy Facilities," DOE/EH-413-0004, DOE, Office of Environmental Policy and Guidance, August.

U.S. Department of Energy (DOE), 1998a, "Waste Acceptance Criteria Attainment Plan for the On-site Disposal Facility," 20100-PL-0014, Revision 0, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH June.

U.S. Department of Energy (DOE), 1998b, "Site-wide Excavation Plan," 2500-WP-0028, Revision 0, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH, July.

U.S. Department of Energy (DOE), 1996, "Final Record of Decision for Remedial Action at Operable Unit 5," 7478 U-007-501.4, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH, January.

U.S. Department of Energy (DOE), 1995, "Final Record of Decision for Remedial Actions at Operable Unit 2," 7021 U-004-501.3, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH, May.

U.S. Environmental Protection Agency (EPA), 2000, "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups," U.S. EPA 540-F-00-005, OSWER 9355.0-784FS-P, U.S. EPA, Office of Solid Waste and Emergency Response, September.

APPENDIX A

RECORDS OF DECISION AND ASSOCIATED DOCUMENTS

RECORDS OF DECISION AND ASSOCIATED DOCUMENTS

Federal Facility Compliance Agreement	1986
Work Plan (identifies specific units of the site for RI/FS)	1988
Consent Agreement	1990
Amended Consent Agreement	1991
Record of Decision for Operable Unit 4	1994
Interim Record of Decision for Operable Unit 3	1994
Record of Decision for Operable Unit 1	1995
Record of Decision for Operable Unit 2	1995
Final Record of Decision for Operable Unit 3	1996
Record of Decision for Operable Unit 5	1996
Explanation of Significant Differences for Operable Unit 4 Silo 3	1998
• Recommendation that treatment of Silo 3 material be evaluated and implemented separately from treatment of Silos 1 and 2 material	
Final Record of Decision Amendment for Operable Unit 4 Silos 1 and 2	2000
Explanation of Significant Differences for Operable Unit 5	2001
• Resulted in change of FRL for uranium in groundwater from 20 ppb to 30 ppb	
Explanation of Significant Differences for Operable Unit 1	2002
• Recommendation for processing other FEMP waste streams through the OU1 remediation facilities and processes	
Final Record of Decision Amendment for Operable Unit 1	2003
Final Record of Decision Amendment for Operable Unit 4 Silo 3	2003
Final Explanation of Significant Differences for Operable Unit 4 Silos 1 and 2	2003
Draft Final Explanation of Significant Differences for Operable Unit 4	2004
Draft Final Explanation of Significant Differences for Operable Unit 3	2005

APPENDIX B

INSTITUTIONAL CONTROL REQUIREMENTS AS STATED IN THE RECORDS OF DECISION

INSTITUTIONAL CONTROL REQUIREMENTS AS STATED IN THE RECORDS OF DECISION

Operable Unit 2 Record of Decision (DOE 1995)

The selected remedy will include the following as institutional controls:

- Continued federal ownership of the OSDF site
- OSDF access restrictions (fencing, gates, and warning signs) access will be controlled by proper authorization and is anticipated to be limited to personnel for inspection, custodial maintenance, or corrective action
- Restrictions on the use of property will be noted on the property deed before the property could be sold or transferred to another party
- Groundwater monitoring following closure of the OSDF

Operable Unit 5 Record of Decision (DOE 1996)

Long-term maintenance will be provided as part of the selected remedy. The selected remedy includes the following key components for institutional controls and monitoring:

- Continuation of access controls at the Fernald site, as necessary, during the conduct of remedial actions. Property ownership will be maintained by the federal government, and will be comprised of the disposal facility and associated buffer areas.
- Maintenance of remaining portions of the Fernald site (outside the disposal facility area) under federal ownership or control (e.g., deed restrictions) to the extent necessary to ensure the continued protection of human health commensurate with the cleanup levels established by the remedy. If portions of the Fernald site are transferred or sold at any future time, restrictions will be included in the deed, as necessary, and proper notifications will be provided as required by CERCLA. The U.S. EPA must approve of all ICs including types of restrictions and enforcement mechanisms if the property is transferred or sold.
- Maintenance of the on-property disposal facility will be performed to ensure its long-term performance and the continued protection of human health and the environment.
- Conduct an environmental monitoring program during and following remedy implementation to assess the short- and long-term effectiveness of remedial actions.
- Provision of an alternate water supply to domestic, agricultural, and industrial users relying upon groundwater from the area of the aquifer exhibiting concentrations of contaminants exceeding the final remediation levels. The alternate water supply will be provided until such time as the area of the aquifer impacting the user is certified to have attained the final remediation levels.

APPENDIX C

FERNALD SITE CONTACT INFORMATION

FERNALD SITE CONTACT INFORMATION

EMERGENCY CONTACT

Grand Junction 24-hour Monitored Security Telephone Number
877-695-5322

Fernald Site Emergency Telephone Number
911 or 877-695-5322

Fernald OSDF Emergency Telephone Number
911 or 877-695-5322

OFFICE OF LEGACY MANAGEMENT – FERNALD

Site Manager
Jane Powell
Department of Energy
Office of Legacy Management
513-648-3148
www.lm.doe.gov

OFFICE OF ENVIRONMENTAL MANAGEMENT – FERNALD

Director
Johnny Reising
Department of Energy
Office of Environmental Management
Fernald Field Office
513-648-3139
www.fernald.gov

ENVIRONMENTAL AGENCIES

Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, IL 60604-3590
(312) 886-0992

Fernald Project Coordinator
Ohio Environmental Protection Agency
401 East Fifth Street
Dayton, OH 45402-2911
(937) 285-6357
www.epa.state.oh.us

United States Fish and Wildlife Service
Suite H
6950 American Parkway
Reynoldsburg, OH 43068

FERNALD SITE COMMUNITY INVOLVEMENT COORDINATOR

Stakeholder Relations Specialist
Susan Walpole
S.M. Stoller, Corp.
513-648-4026

LOCAL POLICE AUTHORITY

Crosby Township/Hamilton County Police
Administration Office
513-825-1500

Morgan Township/Butler County Police
Administration Office
513-887-3010

Note: This information will be updated as necessary.

APPENDIX D

EXAMPLE OF OSDF AND FERNALD SITE INSPECTION FORMS

OSDF Cell Cap Post Closure Inspection Checklist

Date of Inspection: Weather Conditions:

Time of Inspection: Temperature: ^{0}F Wind Speed (Miles per hour) and Direction:

Inspection By: Transect Direction* *

Inspection Component	Condition for Each Cell Cap A* or U*								Comments	Addressed
	1	2	3	4	5	6	7	8		
1. Entrance Road/Monitoring Access Road										
1A. Verify entrance gate, lock and signage are intact and in good working order.										
1B. Verify that access gates are locked to prevent unauthorized entry.										
1C. Visually observe condition of access road for signs of erosion, ruts, standing water, proper drainage and excess vegetation.										
1D. Verify that access road surfacing, cross slope, reflectors, and signage are intact and in good condition.										
2. Chain Link Fence and Signage										
2A. Walk length of fence and ensure fence, posts, etc. are intact and in good condition. Ensure that gates are closed/locked to prevent unauthorized entry.										
2B. Verify that the proper signage is intact and in good condition at the following locations: Restricted Access; Certified Area; and Restored Area. (Some signs not installed at this time).										
2C. Check for vegetation growing over fences, barricades, signs and any noxious vegetation per State of Ohio Regulations (attached) and invasive plants growing on or around OSDF perimeter.										
3. Surface Water Management										
3A. Check integrity of drainage channels around OSDF for erosion or debris restricting water flow (see attached map). Build up of debris/sedimentation in drainage ditch is not to exceed 6 inches.										
3B. Visually check the integrity of RipRap in drainage channels for signs of deterioration or removal of rock.										
3C. Visually check for the presence of woody vegetation growing in drainage channels and in Rip-Rap										
3D. Visually check the integrity of run-on and run-off control features including: Ditch checks, Gravity Inlet structures, and Culverts.										

***A** = Satisfactory ***U** = Unsatisfactory (comments required)

** Transcect Direction should alternate each inspection (North to South & East to West)

OSDF Cell Cap Post Closure Inspection Checklist

Date of Inspection: Weather Conditions:

Time of Inspection: Temperature: ^{0}F Wind Speed (Miles per hour) and Direction:

Inspection By: Transect Direction* *

Inspection Component	Condition for Each Cell Cap A* or U*								Comments	Addressed
	1	2	3	4	5	6	7	8		
4. (A) Final Cover										
4A. Walk cover and side slopes in 25-ft (+/- 5-ft) transects and visually inspect for the following items:**										
4A1. Inspect erosion rills/channels. Flag any observable rills/channels greater than 3 inches wide and 6 inches deep or excessive erosion.										
4A2. Any observable depressions, settlement/subsidence, slumping or desiccation cracks. Flag any observable depressions, slumps, settlement/subsidence or dessication cracks.										
4A3. Any ponding or standing water. Flag any standing water.										
4A4. Evidence of burrowing animals or other bio-intrusion. Flag any observable evidence of bio-intrusion.										
4A5. Evidence of vehicle traffic on the OSDF cap.										
4B. Walk toe of slope and visually inspect for the following:										
4B1. Evidence of settlement/subsidence, erosion, and seepage. Flag any observable evidence of settlement/subsidence, erosion, or seepage.										
4B2. A 20-ft corridor at the toe for the presence of woody vegetation, siltation, and/or biointrusion. Flag any woody vegetation, siltation, and/or biointrusion.										
4B3. Condition of rip-rap. Flag any observable abnormalities.										
4C. Inspect toe at final cover for evidence of freezing or siltation. Flag any observable abnormalities.										

***A** = Satisfactory ***U** = Unsatisfactory (comments required)

** Transect Direction should alternate each inspection (North to South & East to West)

OSDF Cell Cap Post Closure Inspection Checklist

Date of Inspection: Weather Conditions:
Time of Inspection: Temperature: ^{0}F Wind Speed (Miles per hour) and Direction:
Inspection By: Transect Direction**

Inspection Component	Condition for Each Cell Cap A* or U*								Comments	Addressed
	1	2	3	4	5	6	7	8		
4D. Walk cover and side slopes in 25-ft (+/- 5-ft) transects and visually check vegetative cover for the following:										
4D1. General health of grass cover and signs of stressed or dead grass should be noted.										
4D2. Adequate grass coverage/density with no bares spots greater than 3-ft in diameter. Flag any bare spots greater than 3-ft in diameter. Any areas with questionable vegetative coverage will be sampled for percent cover and type of vegetation using meter-square quadrants.										
4D3. Inspect the cover for the presence of woody vegetation (i.e., trees or shrubs) or noxious/invasive plants growing. Flag any woody and/or noxious/invasive vegetation for removal/herbicide.										
4E. Visually inspect locations where Cell 1 monitoring equipment and infrastructure has been removed. Check for settling of fill material. Check for adequate vegetative cover.										
5. Groundwater Monitoring Wells										
5A. Visually inspect all groundwater wells for damage and integrity of well infrastructure.										
5A1. Groundwater Monitoring Wells										
5A2. Horizontal Monitoring Wells										

***A** = Satisfactory ***U** = Unsatisfactory (comments required)

** Transect Direction should alternate each inspection (North to South & East to West)

OSDF Cell Cap Post Closure Inspection Checklist

Date of Inspection: Weather Conditions:

Time of Inspection: Temperature: ^{0}F Wind Speed (Miles per hour) and Direction:

Inspection By: Transect Direction**

Inspection Component	Condition for Each Cell Cap A* or U*								Comments	Addressed
	1	2	3	4	5	6	7	8		
6. Miscellaneous										
6A. Visually inspect the integrity of survey benchmarks, cell cap boundary markers and corner monuments. Flag/note any abnormalities.										
6B. Visually inspect the integrity of the perched water interceptor trench (once installed). Note any abnormalities.										
6C. Visually observe/inspect the corridor 50-ft outside of OSDF for signs/evidence of land use changes, settlement/subsidence, erosion, standing water, encroachment, livestock grazing or noxious vegetation. Note any changes/abnormalities.										
6D. Visually inspect all infrastructure for any act of vandalism.										
6E. List any other observations not listed above.										

***A** = Satisfactory ***U** = Unsatisfactory (comments required)

** Transect Direction should alternate each inspection (North to South & East to West)

REFERENCE SOURCES FOR POST CLOSURE OSDF INSPECTIONS

1. Post-Closure Care and Inspection Plan, On-Site Disposal Facility
2. On-Site Disposal Facility Technical Specification #'s 02831, 02270, 02271, and 02930
3. On-Site Disposal Facility Drawing #'s 90X-5500-E-00851 and 90-5500-G-00577
4. Construction Drawing # 90X-6000-G-00073
5. Phase III Drawing #'s 90X-6000-G-00302 and 90X-6000-G-00310

Fernald Site Area Post-Clo[illegible] Inspection Checklist

Date of Inspection:_____ Weather Conditions: Sunny/PtSunny/Cloudy/PtCloudy/Rain/Snow
Time of Inspection:_____ Temperature:_____ °F Wind Speed (miles per hour) and Direction:_____
Inspection By: Other observations

Inspection Component	Condition A* or U*	Comments	Corrective Action(s) Proposed	Reference Source
1. Disturbance and Use of Fernald Site				
1A. Inspect access points to ensure that site restrictions and contact information are clearly posted.				LMICP
1B. Ensure that any perimeter gates/fences/barriers are in proper working condition.				"
1C. Visually inspect interior and perimeter areas to ensure that no unauthorized use or disturbance is occurring.				"
1D. Note any change in adjacent off-property land use.				"
1E. Visually inspect site wetlands to ensure no dredge fill or other type of disturbance is occurring.				Clean Water Act
1F. Visually inspect restored areas to ensure that prohibited noxious weeds are not present.				OAC
1G. Visually monitor Paddys Run to ensure disturbance of Sloan's crayfish habitat is not occurring.				
1H. Visually monitor along Paddys Run corridor to ensure disturbance of Indiana Bat habitat is not occurring.				Endangered Species Act
1I. Visually inspect site for excessive erosion.				LMICP
1J. Annually verify that all Deed Restrictions and other Real Estate use restrictions are in place and are applicable.				LMICP
2. Prevent Human and Environmental Exposure to Residual Contaminants				
2A. Visually inspect infrastructure supporting Aquifer Remedy to ensure no unauthorized access or disturbance is occurring.				LMICP
2B. Visually inspect perimeter areas to verify that prohibited activities (e.g., digging, soil removal, swimming) are not occurring on Fernald site.				"
2C. Visually inspect uncertified areas to ensure no digging, disturbance or tampering with signs is occurring.				"
2D. Visually inspect access control grating on the Main Drainage Corridor 60-inch culvert.				
2E. Annually (following harvest) inspect soil cover over outfall line to ensure sufficient soil cover (30 inches) is present.				
3. Information Management				
3A. Verify that site information is available to the public and other stakeholders as planned.				LMICP
3B. Verify that information on site inspections and maintenance is readily available.				LMICP
3C. Verify that requests for site information are being addressed and fulfilled as planned.				LMICP
3D. Verify that as-built drawings and information on OSDF contents and design are readily available.				LMICP

*A = Satisfactory *U = Unsatisfactory (comments and identification on site map required)

3/07 A

Fernald Site Area Post-Closure Inspection Checklist

Date of Inspection:_____ Weather Conditions: Sunny/PtSunny/Cloudy/PtCloudy/Rain/Snow

Time of Inspection:_____ Temperature:_____ ^{0}F Wind Speed (miles per hour) and Direction:_____

Inspection By:_____ Other observations_____

Inspection Component	Condition A* or U*	Comments	Corrective Action(s) Proposed	Reference Source
4. Site Interviews				
4A. Contracted Land Manager – Identify any unusual occurrences or problems at Fernald site.				LMICP
4B. Site Information/Data Manager – Ensure site data is available and information is being managed as planned.				"
4C. Aquifer Restoration Manager – Verify that Aquifer remediation is progressing as planned and identify any unusual occurrences				"
4D. Other staff as appropriate – Identify any problems or site issues.				"
4E. Hamilton County/Butler County Sheriff – Identify any concerns or issues.				"
4F. Ross/Crosby Township Police/Fire Departments – Identify any concerns or issues.				"
4G. Ohio "Call Before You Dig" Program Office – Ensure Fernald site information is properly noted to prevent unauthorized excavation on the site.				"
4H. Stakeholder Groups (e.g., FRESH, Post-Closure Coalition) – Identify any concerns or problems.				"
4I. Adjacent landowners.				

*A = Satisfactory; U = Unsatisfactory (comments and identification on site map required)